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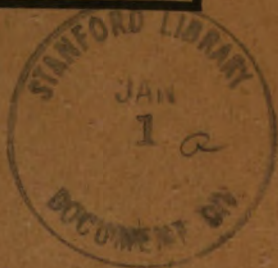
FM 23-41

WAR DEPARTMENT

SIC FIELD MANUAL

**SUBMACHINE GUN
CALIBER .45, M3**

30 October 1943



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30 October



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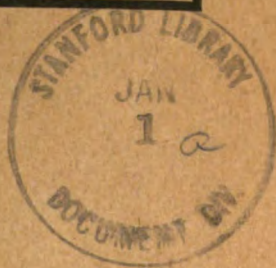
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BASIC FIELD MANUAL

**SUBMACHINE GUN
CALIBER .45, M3**

30 October 1943



W1.33:

FM 23-41

C 1

BASIC FIELD MANUAL

SUBMACHINE GUN CALIBER .45 M3

WAR DEPARTMENT
WASHINGTON 25, D. C., 30 March 1944.

CHANGES
No. 1 }

FM 23-41, 30 October 1943, is changed as follows:

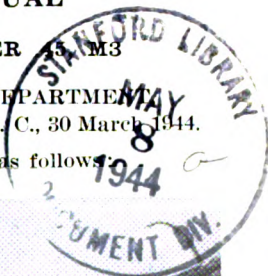


FIGURE 11.—To remove trigger guard, place one side of shoulder rest of stock on housing assembly, against trigger guard, and pry trigger guard out of pistol grip. Rotate guard toward front of gun and unhook it from housing.

7. DISASSEMBLY OF GROUPS.

b. *Housing assembly* (fig. 19) (Superseded).—The housing assembly is not disassembled except for the replacement of parts, under the supervision of ordnance personnel. When

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BASIC FIELD MANUAL

necessary to disassemble, remove the cotter pin. Place the recess in the end of the stock over the short end of the retracting lever spring and, using the stock as a lever, close the spring. Withdraw the retracting handle assembly. Release the spring gently and remove the retracting lever assembly. The only disassembly permitted on the retracting lever assembly is the removal of the pawl spring by unscrewing the pawl spring pin. In disassembly of the housing group, do not allow the pawl to be forced beyond its normal open position. The pawl spring will be bent and will bind in the retracting lever assembly.

c. Bolt and guide rod group.—Remove the guide * * * not be removed. The extractor (fig. 20) which projects from the forward end of the bolt is removed for replacement or, occasionally, for cleaning. The frequency of removal depends on the amount of firing done and the conditions under which the weapon is used. Deposits of carbon or dirt are not allowed to accumulate around the extractor. To remove the extractor, drive out the extractor pin from the small end. Drive the pin in firmly after replacing the extractor.

■ 8. REASSEMBLY OF GROUPS.

* * * * *

b. Housing assembly (Superseded).—Replace the retracting lever spring and retracting lever assembly in the housing, with the long end of the spring to the rear. Close the spring with the stock as in paragraph 7b. Slide the retracting lever pivot through the housing and insert the cotter pin on the left side of the housing. Turn the pawl down.

NOTE.—Rescinded.

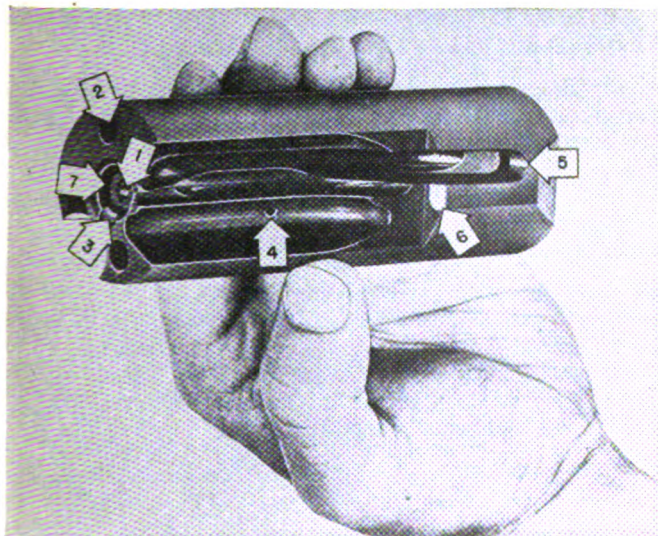
* * * * *

■ 9. REPLACING GROUPS IN GUN.—*a. General.*—Insert trigger assembly * * * order of disassembling. See that the retracting lever pawl is in the proper position, with the front end resting against the cam on the front of the housing. With the receiver * * * the pistol grip.

b. Conversion to 9-mm (Superseded).—(1) *General.*—The weapon is converted from .45 caliber to 9-mm by substituting a 9-mm bolt, barrel and magazine adapter to the receiver, and by the use of the 9-mm magazine. The conversion kit, as is-

SUBMACHINE GUN CALIBER .45, M3

sued, contains also a new type of magazine catch which is permanently substituted for the old catch. It will work with either type magazine.



- 1. Firing pin.
- 2. Guide rod bearing.
- 3. Extractor.
- 4. Extractor pin.

- 5. Retracting lever pawl notch.
- 6. Sear notch.
- 7. Cartridge recess.

FIGURE 20. Bottom view of bolt.

(2) *Magazine adapter*.—The magazine adapter is fitted into the magazine recess with the open side to the front and the flanges on the bottom. The vertical slot in the upper right side enables the magazine catch to reach the notch in the magazine. The other conversion parts are assembled in the same manner as the corresponding .45 caliber parts. (Pars. 8 and 9).

(3) *9-mm magazine loader*.—This is similar to the .45 caliber magazine loader (figs. 1 and 24), except that it has a loading handle instead of a bent loading bar. To use, slide the holder over the top of a 9-mm magazine and push it down until the spring catch snaps into place in the notch on the upper rear

BASIC FIELD MANUAL

side of the magazine. Depress the loading handle and insert a cartridge. Raise the handle to slide the cartridge back into the magazine. Depress the handle and insert another cartridge. The magazine holds 32 rounds.

(4) *Care and cleaning.*—Care and cleaning of the 9-mm weapon are as prescribed in paragraphs 10 to 20.

■ 22. **BACKWARD MOVEMENT OF PARTS.**—The cartridge having been fired, the pressure from the explosion is exerted against the cartridge recess in the face of the bolt. The chamber pressure * * * ejector and extractor. The bolt continues to move to the rear until its energy is stored up in the compressed driving springs or until stopped by contact with the guide rod retaining plate. The sear notch * * * in paragraph 23.

■ 23. **FORWARD MOVEMENT OF RECOIL PARTS.**—When the trigger * * * from the chamber. The firing pin in the center of the cartridge recess of the bolt (fig. 20) strikes the primer, firing the cartridge. At the instant of firing, the cartridge is inclosed by the chamber and the cartridge recess of the bolt, and the rim is engaged by the extractor.

■ 31. **DURING FIRING.**

* * * * *

d. (Added.) If the gun continues to fire after the trigger is released, press the magazine catch to release the magazine. Keep the gun pointed at the impact area.

[A. G. 300.7 (18 Dec 43).]

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G. C. MARSHALL,

Chief of Staff.

BASIC FIELD MANUAL

SUBMACHINE GUN CALIBER .45, M3

CHANGES }
No. 2 }

WAR DEPARTMENT,

WASHINGTON 25, D. C., 26 August 1944.

FM 23-41, 30 October 1943, is changed as follows:

Delete references to air targets wherever they occur throughout the manual.

■ 26. OTHER MALFUNCTIONS.—*a. Obstructions.*—For any other
* * * *only method permitted.*

b. Housing assembly (Added).—If the bolt cannot be moved to the rear because of malfunction of the housing assembly, the following procedure may be used *in combat only*:

(1) Remove the magazine, turn the gun over, and see that the chamber is empty.

(2) Check to see that the trigger is in the forward position and that the trigger spring functions.

(3) Grasp the gun by the barrel collar and pistol grip and holding the barrel up, swing the weapon downward, reversing the motion with a sharp jerk. The bolt will be thrown to the rear and, if the motion was sufficiently forceful, it will engage the sear.

(4) *This expedient is never permitted on the range.*

Section II, chapter 4, and paragraph 88 are rescinded.

■ 111. ALLOTMENT OF TIME.—A suggested allotment * * * for individual firing.

Subject

	Time (hour)
Instruction, dismounted practice course-----	9
Instruction, vehicular firing-----	12
Instruction, moving ground targets-----	8
Record, dismounted practice course-----	3

[A. G. 300.7 (22 Aug 44).]

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IC 2: T/O & E 2-2; 2-10-1; 2-12; 2-13; 2-19;
IC 5: T/O & E 5-216; 5-217;
IC 6: T/O & E 6-167;
IC 7: T/O & E 7-32; 7-33; 7-36; 7-37;
IC 11: T/O & E 11-57.

For explanation of symbols, see FM-21-6.

BASIC FIELD MANUAL

SUBMACHINE GUN CALIBER .45, M3

CHANGES }
No. 3 }

WASHINGTON, D. C., 30 March 1945

FM 23-41, 30 October 1943, is changed as follows:

■ 0.1. SUBMACHINE GUN, CALIBER .45, M3A1. (Added.)—*a.* The submachine gun, caliber .45, M3A1, is the designated standard, and the submachine gun, caliber .45, M3, has been designated limited standard. FM 23-41 will henceforth be considered applicable throughout to the M3A1, as well as to the M3, except where marked deviations are indicated in this or any subsequently published change.

b. The general appearance, characteristics and data of the submachine gun, caliber .45, M3A1 (figs. 1.1 and 2.1) are similar to the M3, with the following improvements:

(1) The retracting handle assembly, the retracting lever assembly, and the retracting lever spring have been eliminated in the M3A1. The housing of the M3A1 contains only the ejector.

(2) A cocking slot has been cut into the top front portion of the M3A1 bolt. The gun is cocked by inserting a finger of the right hand in the cocking slot and drawing the bolt to the rear until it is engaged by the sear.

(3) The ejector port and cover of the M3A1 are longer, to allow the bolt to be drawn back far enough by the finger to be engaged by the sear. The safety lock is farther to the rear on the cover. The safety lock recess on the bolt, which the safety lock enters to lock the bolt in its forward position, is also located farther to the rear. The locking of the bolt in the rearward position is accomplished by the safety lock entering the rear of the cocking slot when the cover is closed.

(4) A longitudinal ejector groove has been cut into the lower side of the M3A1 bolt. This groove extends the full length of the bolt, in order to allow removal of the bolt assembly without removal of the housing assembly. The M3A1 retaining plate is redesigned to facilitate this independent removal of the bolt assembly.

(5) The rivets attaching the cover to the receiver project into the inside of the receiver, and a groove has been cut into the M3A1 bolt for clearance. The retracting pawl notch on the under side of the bolt has been eliminated.

(6) The driving springs of the M3A1 have been made slightly longer to increase tension, and the rear ends have been painted red as a guide to proper positioning in assembly.

*This change supersedes TB 23-41-4, 15 February 1945.

(7) The magazine loader, which is issued as an accessory of the M3, has been replaced in the M3A1 by a bracket built onto the stock. The magazine is passed through the butt of the stock, and the hand loader is used to depress the magazine follower and allow the insertion of the first cartridge. When the base of the first cartridge contacts the loader, the stock is withdrawn and the cartridge is pushed to the rear of the magazine. When the first cartridge is seated, the hand loader is used to depress this cartridge and allow the insertion of the second cartridge. This process is continued until 30 cartridges are loaded into the magazine. The butt of the M3A1 stock has been redesigned to accommodate this loading method. The top portion of the hand loader forms a cleaning rod stop, which prevents burring of the barrel in cleaning.

(8) The oiler on the M3A1 has been built into the pistol grip. The stylus on the oiler cap is used as a drift to remove the extractor pin.

(9) Flat surfaces have been cut into the front of the M3A1 barrel collar to permit the use of the stock as a wrench when unscrewing a tight barrel assembly. The ratchet is made of lighter spring metal, and has been redesigned to provide a longer depressing lever, for easier disengagement from the barrel collar.

(10) The M3A1 also incorporates the magazine catch shield, which prevents accidental release of the magazine.

c. The assembly and disassembly of the submachine gun, caliber .45, M3A1 is the same as in the M3, with the following exceptions:

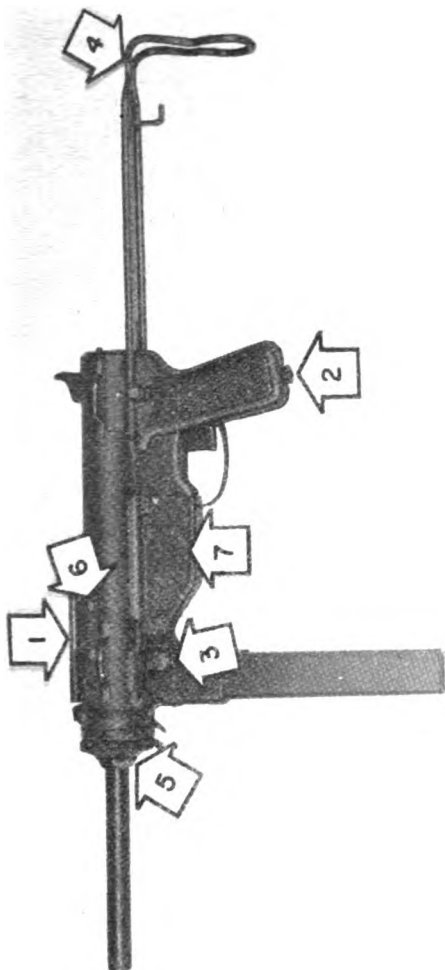
(1) The bolt group of the M3A1 can be removed after opening the cover, removing the barrel and depressing the trigger.

(2) There is no disassembly of the housing assembly of the M3A1.

d. Those portions of FM 23-41 which refer to parts which have been eliminated or changed, as covered in this paragraph, are not to be considered applicable to the M3A1.

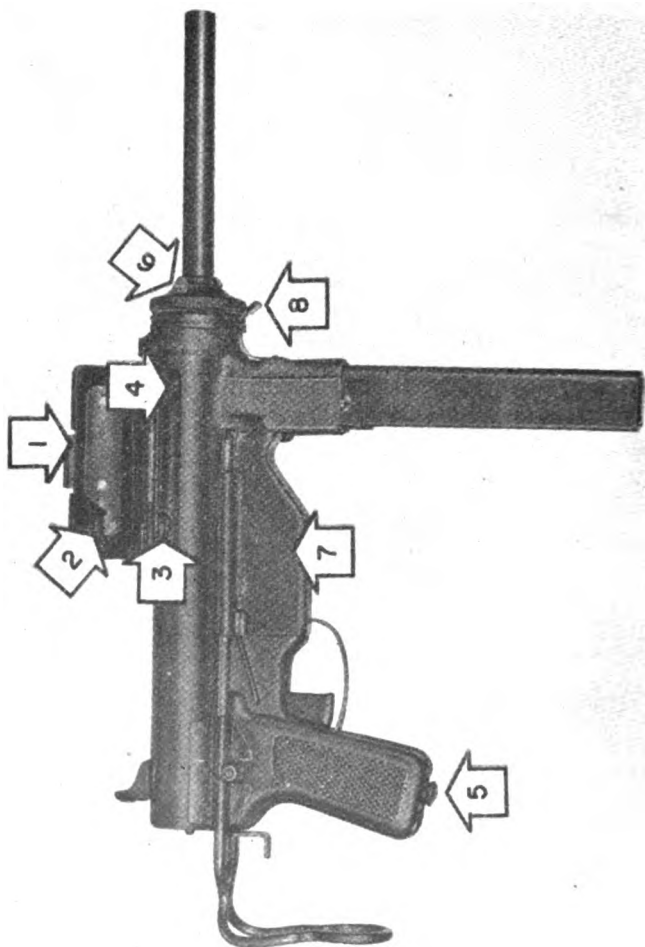
■ 4. NOMENCLATURE OF COMPONENT PARTS.—a. Nomenclature is shown in figures 3 to 9, inclusive.

b. (Added) The stock of the M3A1 is shown in figure 4.1. The M3A1 barrel and housing assembly appear in figures 5.1 and 6.1, respectively.



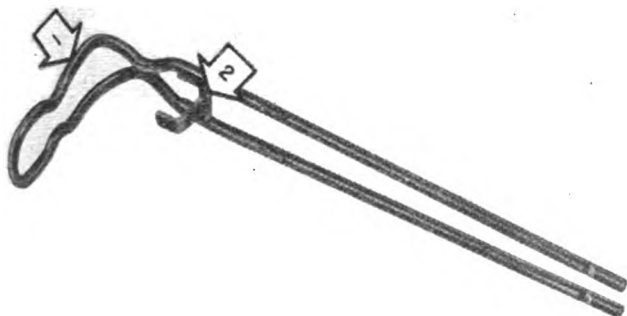
- | | | |
|---------------------------|---------------------|----------------------|
| 1. Cover. | 4. Stock. | 6. Cover rivets. |
| 2. Oiler. | 5. Disassembly cut. | 7. Housing assembly. |
| 3. Magazine catch shield. | | |

FIGURE 1.1.—Submachine gun, M3A1, left side, stock extended.



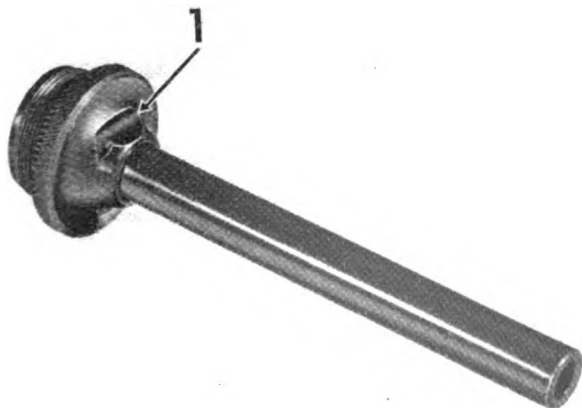
- | | | |
|------------------------|---------------------|----------------------|
| 1. Cover. | 4. Cocking slot. | 7. Housing assembly. |
| 2. Safety lock. | 5. Oiler. | 8. Ratchet. |
| 3. Safety lock recess. | 6. Disassembly cut. | |

FIGURE 2.1. Submachine gun, M3A1, right side, stock telescoped.



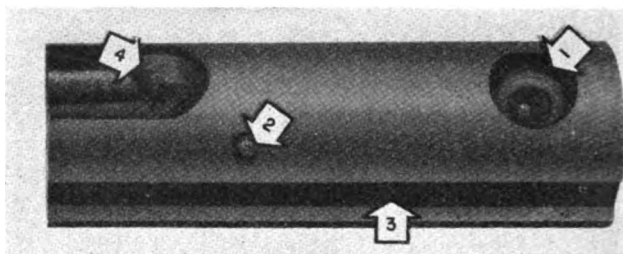
1. Shoulder rest.
2. Hand loader and cleaning rod stop.

FIGURE 4.1.—M3A1 stock.



1. Disassembly cut.

FIGURE 5.1.—M3A1 barrel.



- | | |
|------------------------|---------------------------------------|
| 1. Safety lock recess. | 3. Clearance groove for cover rivets. |
| 2. Extractor pin. | 4. Cocking slot. |

FIGURE 20.1.—Top view of M3A1 bolt.

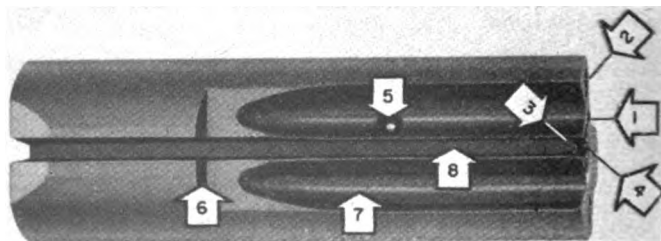
■ 15. AFTER FIRING.

c. *Cleaning bore with rifle bore cleaner.*—(1) Saturate a clean patch with rifle bore cleaner and push it through the bore of the barrel from the muzzle end.

■ 24. ACTION OF GROUPS.

b. *Housing assembly.*—(1) When the retracting * * * the sear notch.

(2 (Added) On the M3A1, when the bolt is drawn to the rear by using the cocking slot, the bottom of the bolt passes over the sear, and the sear is engaged with the sear notch.



- | | | |
|------------------------|----------------------|-------------------------|
| 1. Extractor. | 4. Cartridge recess. | 7. Magazine lip recess. |
| 2. Guide rod bearings. | 5. Extractor pin. | 8. Ejector groove. |
| 3. Firing pin. | 6. Sear notch. | |

FIGURE 20.2.—Bottom view of M3A1 bolt.

■ 25. MISFIRE *a.* In the event * * * any other obstruction.
b. (Added) The same procedure is used with the M3A1, except that the bolt is cocked by use of the cocking slot.

■ 26. OTHER MALFUNCTIONS.

* * *
c. (Added) To remove a stuck cartridge from the chamber of the M3A1 when sufficient power cannot be exerted manually on the bolt, remove the magazine and rap rear end of stock sharply on a solid foundation. The empty case will be extracted by movement of the bolt.

■ 28. ACCESSORIES.

* * *
e. Oiler.—The oiler is * * * in a clip. On the M3A1 the oiler is built into the pistol grip, as shown in figure 1.1.

■ 46. EXECUTION OF MANUAL

* * *
c. RAISE ARMS TO INSPECTION ARMS (in three counts).—(1) Raise the left * * * loaded, unload it. With the M3A1 the procedure is the same, except that the bolt is pulled to the rear by use of the cocking slot rather than with the retracting handle.

d. INSPECTION ARMS to RAISE ARMS (in four counts).

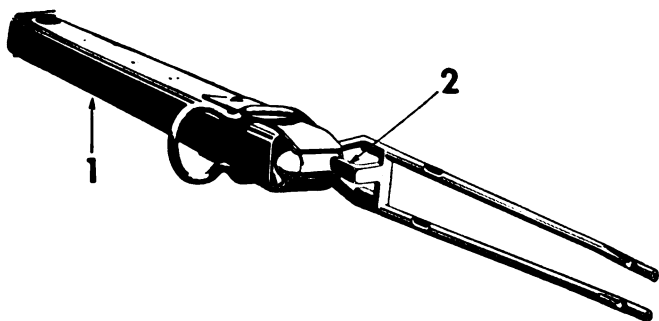
* * *
(2) With the left * * * lock the gun. With the M3A1 the procedure is the same, except that the bolt is pulled to the rear by use of the cocking slot rather than with the retracting handle.

■ 47. LOADING MAGAZINES.

* * *
c. (Added) Figure 24.1 illustrates magazine loading with the M3A1 hand loader.

■ 61. EXAMINATION.

* * *
b. The questions given * * * should be asked. When the M3A1 is being covered in an examination, questions will not include mention of the retracting handle assembly, the retracting lever assembly, and the retracting lever spring, or any other part that has been eliminated by the finger cocking method.



1. Magazine.

2. Hand loader.

FIGURE 24.1.—Use of M3A1 hand loader in loading magazine.

[AG 300.7 (4 Jan 45)]

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 G (5) ; S (2).

Refer to FM 21-6 for explanation of distribution formula.

FM 23-41

BASIC FIELD MANUAL



SUBMACHINE GUN CALIBER .45, M3



**UNITED STATES
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WAR DEPARTMENT,
WASHINGTON, 25, D. C., 30 October 1943.

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for the information and guidance of all concerned.**

[A. G. 300.7 (30 Sep 43).]

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(For explanation of symbols see FM 21-6.)

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BASIC FIELD MANUAL

SUBMACHINE GUN, CALIBER .45, M3

CHAPTER 1

MECHANICAL TRAINING

SECTION I

DESCRIPTION

■ 1. **GENERAL.**—*a.* The submachine gun, caliber .45, M3, is an air-cooled, blowback-operated, magazine-fed, shoulder weapon weighing about 10.25 pounds with a full magazine (figs. 1 and 2). It is relatively light, compact and rugged, and can be easily converted to fire 9-mm parabellum ammunition. The construction is entirely of metal. The stock is one piece of formed steel rod which can be telescoped for ease of handling; its ends are drilled and tapped for use as cleaning rods. There is no provision for semiautomatic fire, but because of the very low cyclic rate, a little practice will enable a gunner to fire single rounds whenever he desires. The weapon is fed from a boxtype magazine having a capacity of 30 rounds of caliber .45 ammunition, or 32 rounds of 9-mm. Swivels are welded to the left side of the receiver for attachment of a web sling.

b. Since 9-mm ammunition is nonstandard, this manual deals only with the weapon in caliber .45. Instructions for conversion and reference data are included for information purposes.

■ 2. GENERAL DATA.

a. Barrel (.45 caliber).

Diameter of bore.....	inches.....	0. 45
Number of grooves.....		4
Twist in rifling, uniform, right one turn in.....	do.....	16
Length of barrel.....	do.....	8

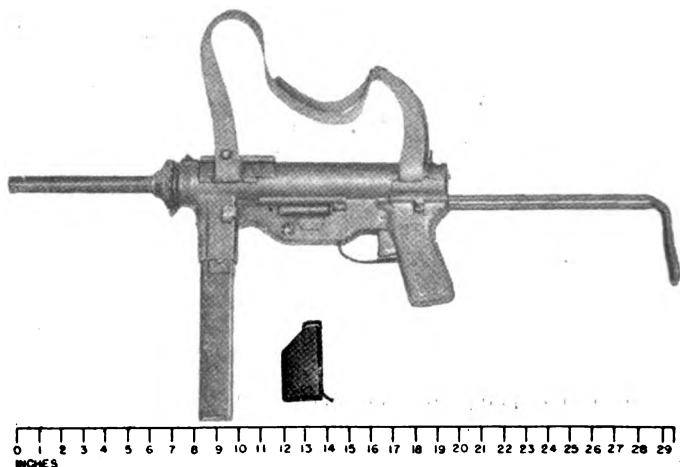


FIGURE 1.—Submachine gun M3, with sling magazine and magazine loader.

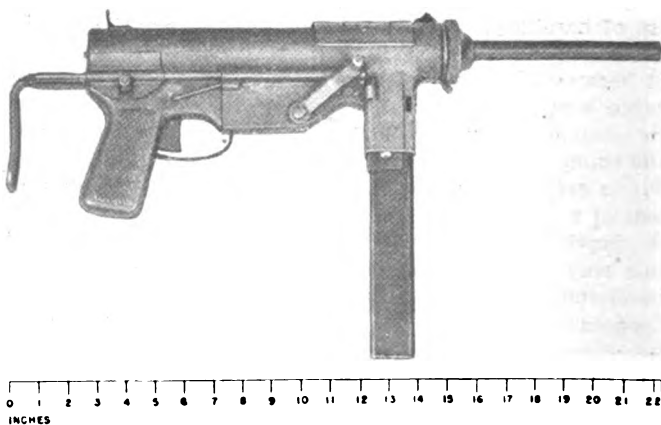


FIGURE 2.—Submachine gun M3, right side, stock telescoped.

b. Barrel (9-mm).

Diameter of bore-----mm--	9
Number of grooves-----	4
Twist in rifling, uniform, right, one turn in-----inches--	10
Length of barrel-----do--	8

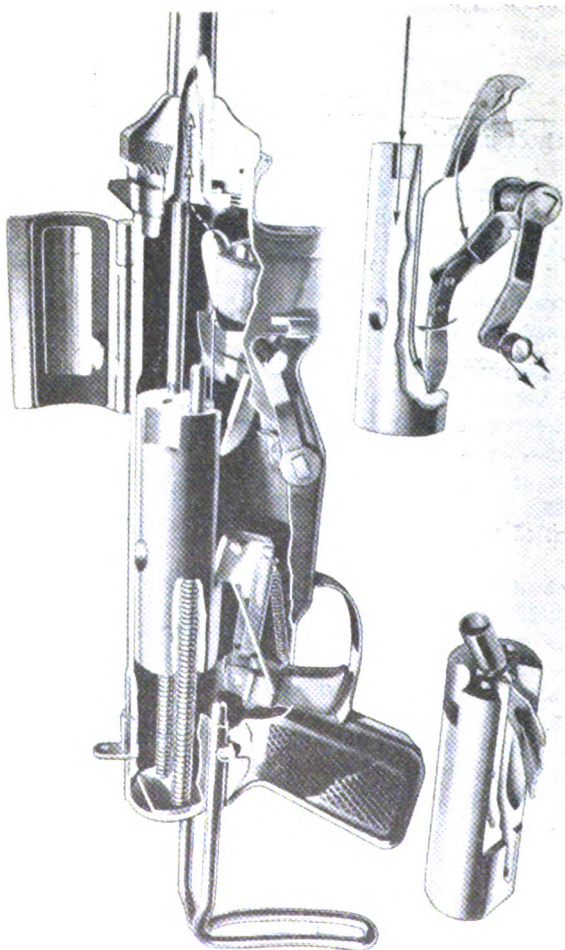
c. Gun.

Length over all-----inches--	29.8
Distance between sights-----do--	10 $\frac{7}{8}$
Weight (gun without magazine). pounds (approx.)--	8.15
30 round magazine (loaded)-----do--	2.10
30 round magazine (empty)-----do--	.75

■ 3. MISCELLANEOUS DATA.

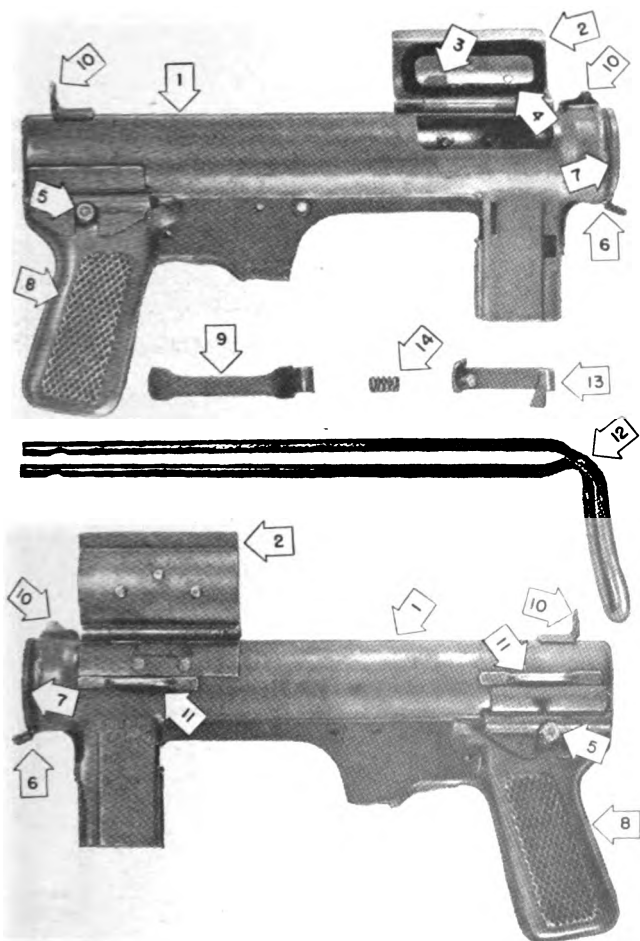
- a. Initial velocity—feet per second—900.
- b. Pressure in chamber—(approximately) pounds per square inch—12,000 to 16,000.
- c. Weight of caliber .45 ball cartridge—(approximately) ounces—0.72.
- d. Weight of caliber .45 bullet—(approximately) ounces—0.53.
- e. Weight of caliber .45 powder charge—(approximately) ounces—0.011.
- f. Rate of automatic fire (cyclic rate)—shots per minute, .45 caliber—450.
- g. Rate of automatic fire (cyclic rate)—shots per minute, 9-mm—450.
- h. Weight of 9-mm conversion parts (magazine adapter, barrel, and bolt)—(approximately) 3 $\frac{1}{2}$ pounds.
- i. Sights 100 yards fixed peep.
- j. Pull to cock weapon—(approximately) pounds—18 to 23.
- k. Trigger pull—(approximately) pounds—5 to 7.
- l. Ammunition—standard caliber .45 ball cartridge, or 9-mm parabellum.
- m. Maximum range—1,700 yards.
- n. Maximum effective range—200 yards.

■ 4. NOMENCLATURE OF COMPONENT PARTS.—Nomenclature is shown in figures 3 to 9, inclusive.



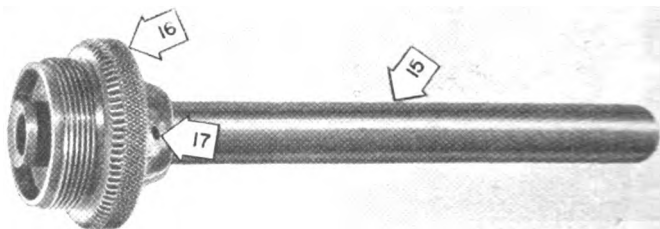
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FIGURE 3.—Submachine gun M3—cut-away view. (Lower left shows camming action of ejector on spent case. Lower right shows action of retracting lever and handle in cocking the gun.)

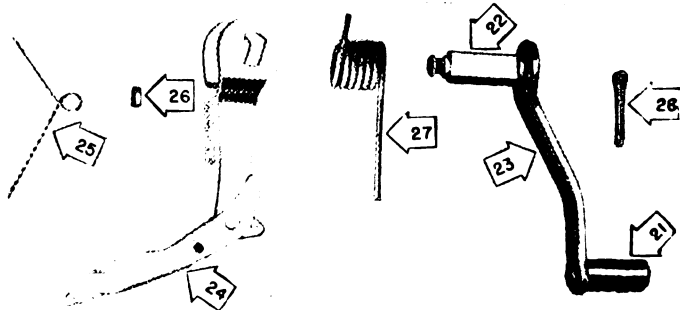
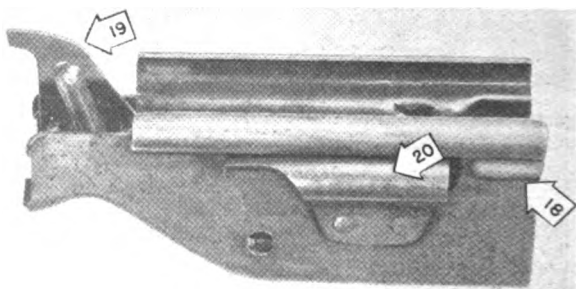


- | | |
|----------------------------|----------------------------|
| 1. Receiver. | 8. Pistol grip. |
| 2. Cover | 9. Trigger guard. |
| 3. Safety lock. | 10. Sight. |
| 4. Cover seal. | 11. Sling swivels. |
| 5. Stock catch. | 12. Stock. |
| 6. Ratchet pad and spring. | 13. Magazine catch. |
| 7. Barrel bushing. | 14. Magazine catch spring. |

FIGURE 4.—Receiver, stock, and magazine catch assemblies.

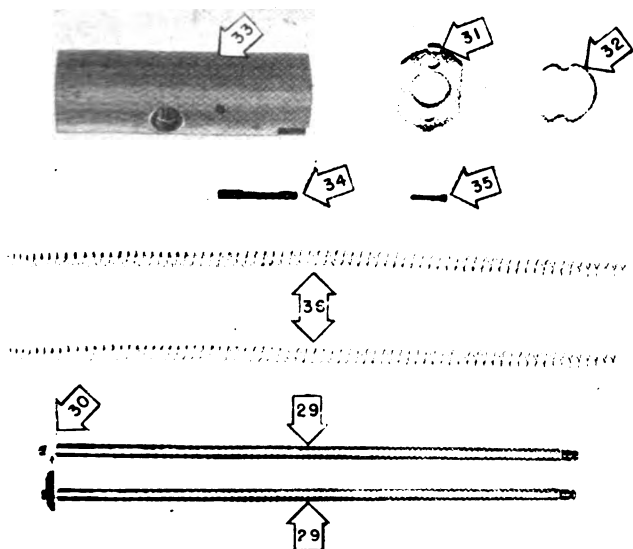


15. Barrel. 16. Barrel collar. 17. Barrel collar retaining pin.
FIGURE 5.—Barrel assembly.



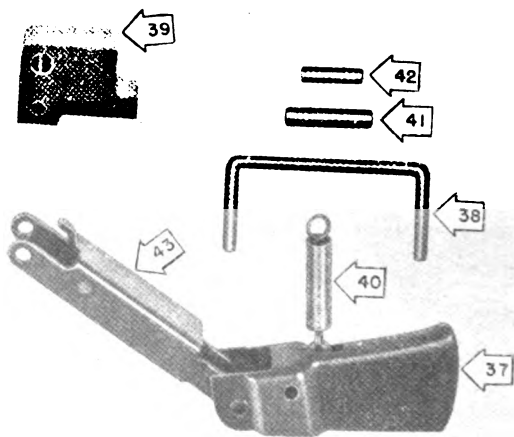
18. Housing.
19. Selector.
20. Oiler clip.
21. Retracting handle grip.
22. Retracting lever pivot.
23. Retracting handle.
24. Retracting lever pawl.
25. Retracting lever pawl spring.
26. Retracting lever pawl spring pin.
27. Retracting lever spring.
28. Cotter pin.

FIGURE 6.—Housing assembly.



- | | |
|--------------------------------|---------------------|
| 29. Guide rods. | 33. Bolt. |
| 30. Guide rod retaining plate. | 34. Extractor. |
| 31. Guide rod locating plate. | 35. Extractor pin. |
| 32. Guide rod retaining clip. | 36. Driving spring. |

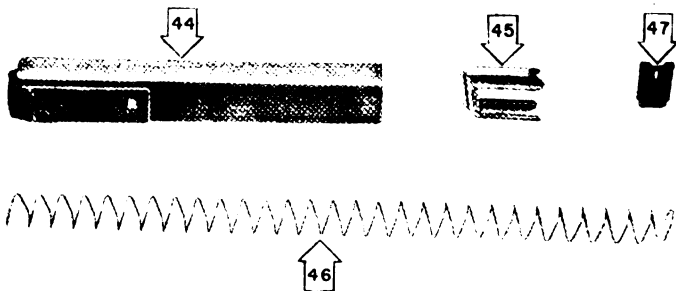
FIGURE 7.—Guide rod and bolt assemblies.



37. Trigger.
38. Trigger pin.
39. Sear
40. Trigger spring.

41. Sear pin.
42. Connector pin.
43. Connector.

FIGURE 8.—Trigger assembly.



44. Magazine body.
45. Magazine follower.

46. Magazine spring.
47. Magazine base.

FIGURE 9.—Magazine

SECTION II

DISASSEMBLY AND ASSEMBLY

■ 5. GENERAL.—*a.* Disassembly is considered under two general headings: removal of groups, and disassembling of the groups.

b. A group is a number of components which either function together in the gun or are intimately related to each other, and should therefore be considered together.

■ 6. REMOVAL OF GROUPS FROM GUN.—Press magazine catch on left side of the receiver and slide out magazine. Be sure that the chamber is empty and the gun is pointed in a safe direction. Then squeeze the trigger, closing the bolt on an empty chamber (see figs. 10 to 18, incl.).



FIGURE 10.—Press in on stock catch on left side of pistol grip and remove stock by pulling directly to the rear.

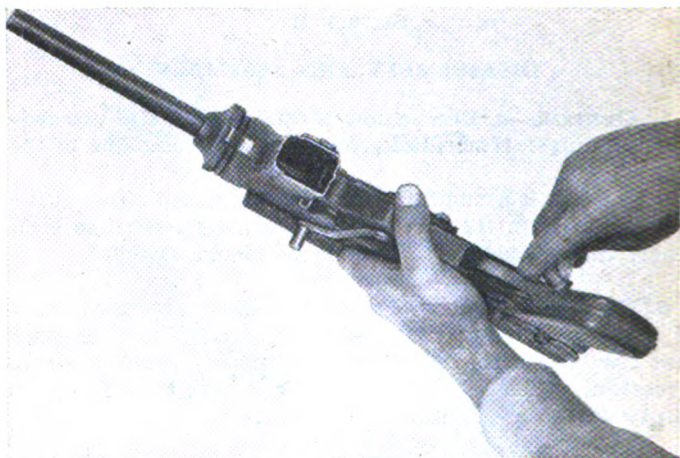


FIGURE 11.—Remove trigger guard by using the rim of a cartridge, a screw driver, or a thin coin to pry the lower end out of its slot in the pistol grip, and withdraw it by rotating down and forward.



FIGURE 12.—Remove housing assembly by pulling down slightly on rear end of housing and then moving assembly to the rear until it is released.

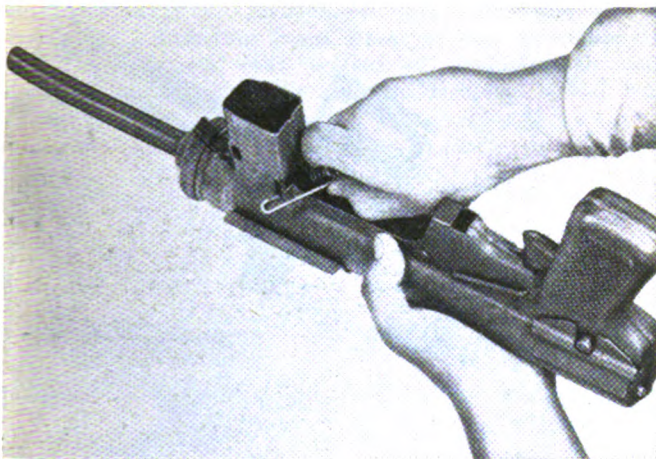


FIGURE 13.—Remove magazine catch and spring.

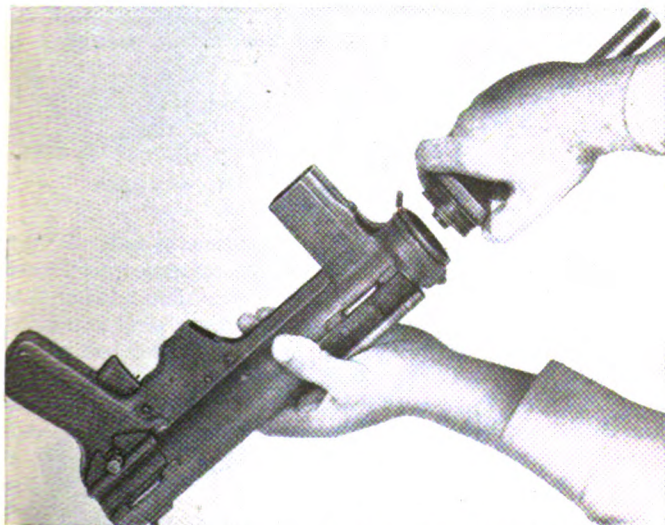


FIGURE 14.—Remove barrel by lifting ratchet and unscrewing barrel collar counterclockwise from the front.

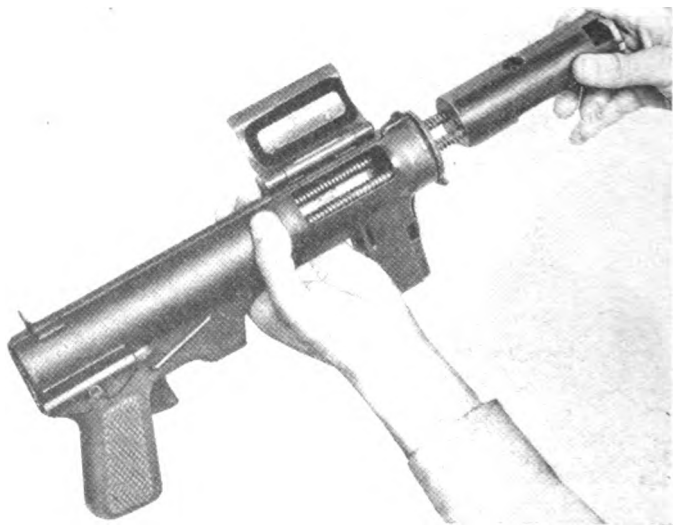


FIGURE 15.—Withdraw bolt group from front of receiver.

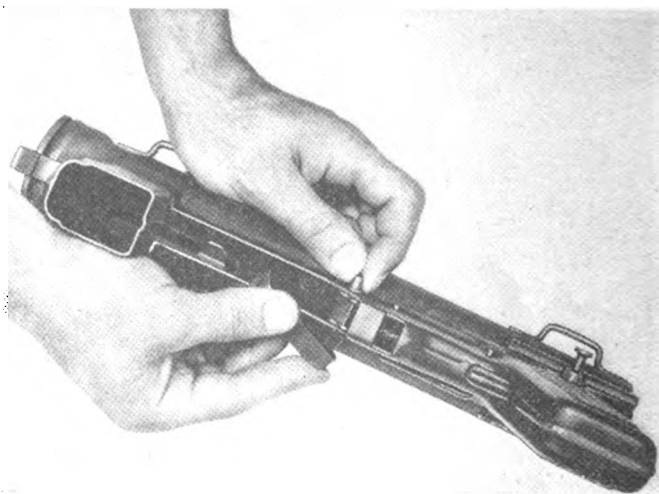


FIGURE 16.—Press out sear pin.

■ 7. DISASSEMBLY OF GROUPS.—*a. Magazine.*—Lift tab in base plate by inserting screw driver in hole and slide out base. Hold fingers over bottom of magazine to keep magazine spring from flying out. Remove spring and follower.

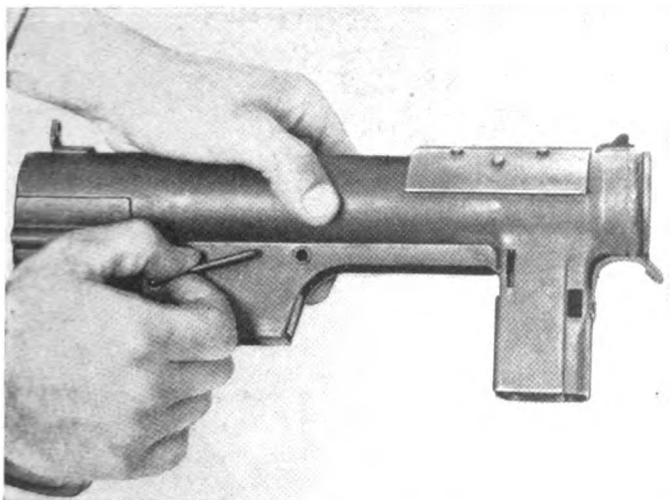


FIGURE 17.—Withdraw trigger pin from receiver.

b. Housing assembly (fig. 19).—Release retracting lever pivot by removing cotter key on the left side of the housing and pull the handle and pivot out to the right while holding retracting lever spring in place. Release the retracting lever spring and remove it and the retracting lever. The ejector is riveted to the housing, and the entire housing must be replaced if the ejector is damaged or worn out. The only disassembly which is permitted on the retracting lever pawl is the replacement of the pawl spring by removal of the pawl pin.

NOTE.—Housing should not be disassembled except for replacement of broken parts.

c. *Bolt and guide rod group.*—Remove the guide rod retaining clip at the forward end of the bolt group. Remove the guide rod locator plate. Lift the bolt and driving springs off the guide rods. The retaining plate which joins the two guide rods may not be removed. The extractor which projects from the forward end of the bolt is not removed except



FIGURE 18.—Withdraw trigger assembly from opening at front of sear. Do not allow connector pin to be lost. The trigger and the connector are a permanently assembled unit; the trigger spring and the connector pin may be removed. No further disassembly is permitted.

for replacement (fig. 20). To replace the extractor, drive out the extractor pin from the small end. Drive the pin in firmly after replacing the extractor.

■ 8. REASSEMBLY OF GROUPS.—a. *Magazine assembly.*—Insert follower and follower spring. Depress the spring so that the base may be inserted in its slots. Press base home.

b. *Housing assembly.*—Replace retracting lever spring and

pawl in housing with the long end of the spring to the rear. Slide retracting lever pivot through the housing and insert the cotter pin on the left side of the housing. Turn the pawl down.

NOTE.—The return of the retracting lever spring to the housing may be made easier by bending the short end of the spring into a slight hook and using the mouth of an empty .30 or .50 caliber cartridge case to press the spring into place.



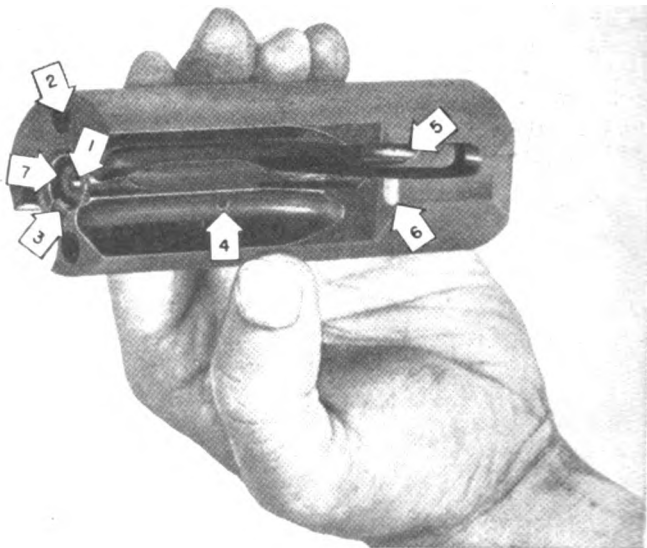
- | | |
|---------------------------|----------------------------------|
| 1. Ejector. | 3. Retracting lever spring. |
| 2. Retracting lever pawl. | 4. Retracting lever pawl spring. |

FIGURE 19.—Interior of housing assembly.

c. Bolt group.—Slide the driving springs on the guide rods. Slide the bolt over the guide rods. Be sure that the springs seat in their recesses. Replace the locator plate and the retaining clip, with the opening of the clip down.

■ **9. REPLACING GROUPS IN GUN.**—*a. General.*—Insert trigger assembly in the receiver, taking care that the connector pin

does not fall out. Insert trigger pin far enough to hold the assembly in place. Manipulate the sear into position by pressing the trigger while pushing upward on the sear. Insert the sear pin and press both ends of the trigger pin home. Insert the bolt group in the front end of the receiver, retain-



- | | |
|-----------------------|---------------------------------|
| 1. Firing pin. | 5. Retracting lever pawl notch. |
| 2. Guide rod bearing. | 6. Sear notch. |
| 3. Extractor. | 7. Chamber recess. |
| 4. Extractor pin. | |

FIGURE 20.—Bottom view of bolt.

ing plate to the rear and grooved side of the bolt down. Replace barrel by screwing the collar all the way down; do not tighten. Replace magazine catch in reverse order of disassembling. With the receiver bottom up in the left hand and the housing assembly in the right hand, insert the ejector into the receiver, and fit the forward end of the housing into its slot in the magazine guide. Drop the rear end of the housing into place. Be sure it is seated. Insert the forward

end of the trigger guard in its slot in the housing and rotate it to the rear. Use manipulation, not force, in this operation. Press the rear end of the trigger guard until it snaps into its slot in the pistol grip.

b. *Conversion to 9-mm.*—Conversion to caliber 9-mm is accomplished by substituting a 9-mm bolt and barrel in the assembly and fitting the 9-mm adapter on the upper end of the magazine.

SECTION III

CARE AND CLEANING

■ 10. **GENERAL.**—The simplicity and reliability of the submachine gun M3, should be an incentive to maintain the weapon in perfect condition. Even though the weapon will function under conditions that would hopelessly clog most automatic weapons, the life of the piece is shortened by such abuse, and its reliability and accuracy may be permanently impaired. The chamber and bore must be kept in perfect condition. The receiver and moving parts are kept clean and lubricated at all times. The same care must be given magazines. Dirty magazines are the cause of nearly all stoppages in firing this weapon.

■ 11. **LUBRICANTS, CLEANING AGENTS, AND RUST PREVENTIVES.**—The following are the only materials authorized and issued for cleaning and lubricating these guns. The use of unauthorized materials such as abrasives is forbidden.

Cleaner, rifle bore.

Soda ash.

Issue soap.

Oil, lubricating, preservative, light.

Oil, lubricating, for aircraft instruments and machine guns.

Compound, rust-preventive, light.

Solvent, dry-cleaning.

Decontaminating agents.

a. *Rifle bore cleaner.*—(1) Rifle bore cleaner is issued for cleaning the bore of the submachine gun after firing. This

material possesses rust-preventive properties and will provide temporary protection against rust. It is better practice, however, to dry the bore immediately after cleaning with rifle bore cleaner and then coat lightly with light preservative lubricating oil.

(2) Rifle bore cleaner will freeze at temperatures below 32°F. If frozen, it must be thawed and shaken well before using. To prevent containers from bursting, they should not be filled more than three-fourths full in freezing weather.

b. Soda ash.—This is a white, odorless powder which is soluble in water. For use, it is dissolved in boiling water in the proportion of 1½ tablespoons of soda ash to 1 pint of water. If boiling water is not available, hot or cold water may be used. This solution can be used to clean the gun bore when rifle bore cleaner is not available.

c. Soap.—A solution of soap should be used for cleaning the bore if neither rifle bore cleaner nor soda ash is available. Prepare the solution by dissolving issue soap, which has been broken or cut up, in hot water in the proportion of ¼ pound soap to 1 gallon water. This solution should be used hot but can also be used cold.

d. Light preservative lubricating oil.—This oil has rust-preventive, as well as lubricating properties but cannot be depended upon to provide protection from rust for long periods. It is used for the lubrication of all moving parts and for short-term protection against rust. Preservative action results partly from the oily film on the metal parts and partly from chemical combination of inhibitors in the oil with the metal. It will protect the metal surfaces from rust even though no appreciable film of oil is present on the metal parts. When it is used on moving parts a thin film of oil must be maintained to provide the necessary lubrication.

e. Lubricating oil for aircraft instruments and machine guns.—This oil may be used for lubricating the submachine gun when light preservative lubricating oil is not available. It is a light lubricating oil possessing only slight rust-preventive properties. When it is used, the metal parts must be inspected daily for rust. If rust is found, parts should be cleaned and again lightly coated with the oil.

f. Light rust-preventive compound.—This compound is

issued for the protection of metal parts for long periods of time while the parts are boxed and in storage. It can be applied with a brush at temperatures about 60° F., but the preferable method is to apply hot either by brushing or dipping.

g. Dry-cleaning solvent.—This noncorrosive, petroleum solvent will remove grease, oil, or rust-preventive compound. Dry-cleaning solvent is highly inflammable and should not be used near open flames. Smoking is prohibited where dry-cleaning solvent is used. It is generally applied with rag swabs to large parts, and used as a bath for small parts. The surfaces must be thoroughly dried with clean rags immediately after using the solvent. Gloves should be worn by persons handling such parts after cleaning to avoid leaving finger marks which are ordinarily acid and induce corrosion. Dry-cleaning solvent will attack and discolor rubber.

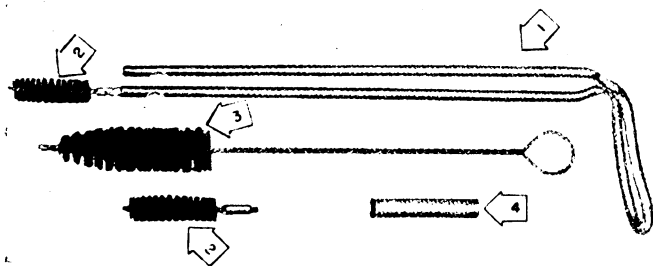
■ 12. **CLEANING INSTRUMENTS.**—The following are the only instruments authorized and issued for cleaning the submachine gun (fig. 21):

Brush, chamber cleaning, M6.

Brush, cleaning, caliber .45, M5.

Stock, submachine gun, M3.

a. Chamber cleaning brush M6.—This brush consists of a steel wire core with bristles, the core being twisted in a spiral to hold the bristles in place. It is used to clean and oil the chamber of the submachine gun.



- | | |
|----------------------------------|--------------------------------|
| 1. Stock. | 3. Chamber cleaning brush, M6. |
| 2. Cleaning brush, cal. .45, M5. | 4. Oiler. |

FIGURE 21.—Cleaning tools.

b. Caliber .45 cleaning brush M5.—This brush consists of a brass wire core and tip and bronze wire bristles. It is screwed to the end of the stock and then passed through the barrel three or four times. The brush is pushed all the way through the barrel before being withdrawn.

■ **13. CARE AND CLEANING WHEN NO FIRING IS DONE.**—*a. General.*—(1) This includes the care necessary to preserve the condition of the submachine gun when no firing is being done.

(2) Guns in the hands of troops should be inspected daily to insure proper condition and cleanliness.

(3) Care and cleaning must include the magazines, which must be kept free from rust, grit and gum, in order to function properly. Do not bend or dent magazines, especially the lips of the mouth.

(4) When not carried on the person, the submachine gun must be transported in a suitable boot provided with the necessary brackets for attachment.

b. Bore.—(1) To clean the bore, push a dry patch through the bore. Repeat this procedure until the patch comes through clean. This cleaning removes accumulations of dust, dirt, and thickened oil in the bore.

(2) After the bore has been thoroughly cleaned, saturate a dry patch with light preservative lubricating oil and push it through the bore.

(3) When issue patches are not available, patches should be cut approximately 2½ inches square to permit their being forced through the bore.

c. Chamber.—(1) The barrel is removed to clean the chamber with the chamber cleaning brush.

(2) Wrap a dry patch around the chamber cleaning brush and push it into the chamber.

(3) Remove all old oil and dirt by twisting the patch in the chamber. Change the patch several times until one comes out clean.

(4) Saturate a clean patch with light preservative lubricating oil and apply this liberally to the chamber.

d. Receiver.—(1) Disassemble, clean, and oil all moving parts completely.

(2) To clean the screw heads and crevices, use a small cleaning brush or small stick.

(3) To clean the metal surfaces, rub with a dry cloth to remove moisture, perspiration, and dirt. Then wipe with a cloth wet with a small quantity of light preservative lubricating oil. This protective film must be maintained at all times.

(4) To clean the outer surfaces of the gun, wipe off the dirt with a dry cloth and then wipe with a cloth moistened with a light preservative lubricating oil.

■ **14. PREPARATORY TO FIRING.**—Before firing, take the following steps to insure efficient functioning of the gun.

a. Dismount the groups.

b. Clean the bore and chamber with a clean, dry patch. Do not apply any oil to these parts before firing.

c. Thoroughly clean and lightly oil the guide rods and the grooves and sear notch in the bottom of the bolt. Do not use grease. Oil should be dropped over pivot points of trigger, sear pin, connector pin, and retracting lever pivot.

d. After returning the housing assembly to the receiver, work the retracting lever back and forth several times to insure thorough lubrication.

e. Rub all outer surfaces with a lightly oiled rag to remove dust.

f. Magazines should be clean and lightly coated with light preservative lubricating oil.

■ **15. AFTER FIRING.**—*a. General.*—(1) The bore of the submachine gun must be thoroughly cleaned by the evening of the day in which it is fired. It must be cleaned in the same manner for the next 3 days.

(2) Firing the submachine gun causes powder and primer fouling to form in the bore and chamber and on the locating plate. These primer salts absorb and retain moisture from the air, thereby causing rust. They must be removed by cleaning with rifle bore cleaner, soda ash solution, soap solution, or water.

b. Cleaning procedure after firing.—(1) Disassemble groups.

(2) Clean bore (*c* or *d* below) and all working parts. If this cannot be done at once, apply oil carefully to prevent rust.

(3) At the first opportunity, clean, oil, and inspect all parts and make needed repairs and replacements.

(4) On reassembly, check operation with dummy cartridges to insure that functioning is correct.

c. Cleaning bore with rifle bore cleaner.—(1) Saturate a clean patch with rifle bore cleaner and push it through the bore of the barrel.

(2) Repeat the operation with clean patches two or three times.

(3) Pass the cleaning brush through the bore three or four times.

(4) Repeat with a patch wet with rifle bore cleaner.

(5) Follow this by dry patches until the patches come out clean and dry.

(6) Examine the bore carefully for cleanliness. If it is not free of all residue, repeat the cleaning process.

(7) Clean the chamber with rifle bore cleaner applied to a patch on the chamber cleaning brush.

(8) Dry the chamber and inspect for cleanliness.

(9) If the chamber and bore are both thoroughly clean and dry, apply light preservative lubricating oil to them by means of patches.

d. Cleaning bore with soda ash or soap solution.—(1) Use soda ash solution if rifle bore cleaner is not available and soap solution or plain water if neither of these is available.

(2) Clean the bore as described in *c* above, using a liberal quantity of the soda ash or soap solution.

(3) Use the cleaning brush while the bore is wet, running it forward and back through the barrel three or four times.

(4) Rinse the bore with clean water to remove the washing material.

(5) Dry the bore by using clean flannel patches. Thoroughly swab barrel until it is perfectly dry and clean.

(6) Treat the chamber in a similar manner using patches on the chamber cleaning brush.

(7) When the bore and chamber are clean and dry, saturate a patch in light preservative lubricating oil and push it

through the bore. Twist another oiled patch in the chamber.

e. Cleaning parts other than bore.—(1) Disassemble the groups. Wipe the receiver clean, taking care to remove dirt from all crevices. Thoroughly clean all moving parts with dry-cleaning solvent, using a small stick covered with a flannel patch to remove dirt from all recesses. Thoroughly clean the front end of the bolt and locating plate and the housing.

(2) Dry all parts thoroughly.

(3) Wipe all parts with a rag wet with light preservative lubricating oil.

f. Exterior surfaces.—Wipe off exterior of the gun with a dry cloth to remove dampness, dirt, and perspiration. Then wipe with a cloth moistened with light preservative lubricating oil.

g. Magazines.—Dirty, bent, and dented magazines are the cause of most malfunctions. Exercise care to avoid denting or bending, especially the lips of the mouth. After firing, and at least once a week in garrison and daily in the field, disassemble the magazine, examine for dents and bends, remove all dirt, wipe clean and dry, and thinly coat with oil. Excess oil will collect dirt.

■ 16. ON THE RANGE OR IN THE FIELD.—To obtain maximum efficiency of the gun, observe the following:

a. Carefully check bore of the gun for obstructions before firing.

b. Never fire a gun with any dust, dirt, mud, or snow in the bore.

c. Keep chamber free from oil and dirt when firing.

d. Never leave a patch, plug, or other obstruction in the chamber or bore. Neglect of this precaution may result in serious injury.

e. If the gun gives indication of lack of lubrication and excessive friction, apply a light coating of oil to the guide rods.

f. Guide rods should be oiled frequently to insure smooth functioning of the gun.

g. In general, it should not be necessary to remove any of the parts of the gun in the field for cleaning. However, if

the mechanism of the gun becomes very dirty, the gun may be disassembled into its main groups for the necessary cleaning and lubrication.

h. In emergencies when the prescribed lubricant is not available, use lubricating oil for aircraft instruments and machine guns or any clean, light mineral oil, such as engine oil.

■ 17. PREPARATION FOR STORAGE.—*a.* Light preservative lubricating oil is the most suitable oil for short time preserving of the mechanism of the submachine gun. It is effective for storage periods of 2 to 6 weeks, depending on climatic conditions. However, guns in short time storage must be inspected every 5 days, and the preservative film must be renewed if necessary. For longer periods of time, guns will be protected with light rust-preventive compound.

b. Light rust-preventive compound is a semisolid material. It is efficient for preserving the polished surfaces, the bore, and the chamber for a period of 1 year or less, depending upon climatic and storage conditions.

c. The guns should be cleaned and prepared for storage with particular care. The bore, all parts of the mechanism, and the exterior of the gun should be thoroughly cleaned with dry-cleaning solvent and then dried thoroughly with clean rags. In damp climates, particular care must be taken to see that the rags are dry. After drying a metal part, do not touch that part with the bare hands. All metal parts should be coated with either light preservative lubricating oil or light rust-preventive compound, depending on the length of storage required. Application of the rust-preventive compound through the bore of the gun is best made by dipping the cleaning brush in the compound and running it through the bore two or three times. The brush must be cleaned before use. Before placing the weapon in storage, the bolt should be in the forward position. The wooden supports of the packing box must be painted with rust-preventive compound before storing the gun. Place the gun in the wooden packing box, handling it with oiled rags. Under no circumstances will a gun be placed in storage in a cloth or other cover, or with a plug in the bore. Such covers collect moisture and causes the weapon to rust.

■ 18. **CLEANING WEAPONS RECEIVED FROM STORAGE.**—Weapons which have been stored in accordance with these instructions will be coated either with light preservative lubricating oil or with light rust-preventive compound. Weapons received from ordnance storage will, in general, be coated with rust-preventive compound. Use dry-cleaning solvent to dissolve and remove all traces of the compound or oil. Failure to clean the recoil spring recesses in the bolt and the guide rods thoroughly may cause malfunctioning at normal temperatures and will certainly do so when the rust-preventive compound congeals at low temperatures. After using the cleaning solvent, be sure to dry all parts by wiping with dry cloths. Then follow the instructions in paragraph 13.

■ 19. **CARE AND CLEANING UNDER UNUSUAL CONDITIONS.**—*a. In cold climates.*—(1) It is necessary that the moving parts of the weapon be kept absolutely free from moisture. It has also been found that excess oil or rust-preventive compound on the working parts will solidify to such an extent as to cause sluggish operation or failure.

(2) Completely disassemble and clean all parts of the gun thoroughly with dry-cleaning solvent before use in temperatures below 0° F. The working surfaces or parts which show signs of wear are lubricated by rubbing with a cloth which has been wet with light preservative lubricating oil and wrung out.

(3) When the weapon is brought indoors, it is first allowed to come to room temperature. It is then disassembled, wiped completely dry of the moisture which will have condensed on the cold metal surfaces, and oiled thoroughly with light preservative lubricating oil.

(4) If possible, such condensation should be avoided by providing a cold place in which to keep the gun when not in use.

(5) If the gun has been fired, it must be thoroughly cleaned and oiled. The bore is swabbed out with an oily patch and when the weapon reaches room temperature, it is thoroughly cleaned and oiled as described in paragraph 15.

(6) Before firing the weapon, clean and oil it as described in paragraph 14.

(7) The bore and chamber must be entirely free of oil before firing.

b. In tropical climates.—(1) In tropical climates where temperature and humidity are high, or where salt air is present, and during rainy seasons, the weapon must be thoroughly inspected daily and kept lightly oiled when not in use. The groups are dismounted at regular intervals and, if necessary, disassembled for drying and oiling of parts.

(2) Unexposed parts and surfaces must be kept clean and oiled.

(3) Light preservative lubricating oil is used for lubrication.

c. In hot, dry climates.—(1) In hot, dry climates where sand and dust are likely to get into the mechanism and bore, the weapons must be wiped clean daily, or oftener if necessary. Groups are dismounted and disassembled for thorough cleaning.

(2) When the weapon is being used under sandy conditions, all lubricant must be wiped from it.

(3) Immediately upon leaving sandy terrain, the weapon must be relubricated with light preservative lubricating oil.

(4) Perspiration from the hands is a contributing factor to rust because it contains acid, and metal parts must be wiped dry frequently.

(5) During sand or dust storms, the muzzle and ejection port and magazines are kept covered if possible.

■ 20. CARE DURING GAS ATTACK.—*a. General.*—(1) It is important to prevent the chemicals used in a gas attack from getting in or on the gun and ammunition. When a gas attack is anticipated, steps will be taken to cover and protect the gun, ammunition, spare parts, and accessories.

(2) Apply oil to the surfaces of all parts of the weapon, ammunition, and spare parts.

(3) If the gun need not be used during the gas attack, cover the oiled gun with covers or place it in a container so that it cannot come into contact with any contaminating chemicals.

b. Decontamination.—(1) A complete suit of impermeable clothing and a service gas mask must be worn for decontamination.

(2) Matériel contaminated with chemicals other than mustard or lewisite must be cleaned as soon as possible with dry-cleaning solvent or denatured alcohol.

(3) Do not allow the chemical agents to come into contact with the skin. Always bury all rags or wiping materials used for decontamination.

(4) If the surface of the matériel is coated with grease or oil and has been in a mustard or lewisite attack, first remove the grease or oil by wiping with rags wet with dry-cleaning solvent.

(5) Decontaminate metal surfaces with a solution of agent, decontaminating, noncorrosive. Prepare this by mixing 1 part agent, decontaminating, noncorrosive, to 15 parts solvent (acetylene tetrachloride).

(6) After decontamination, clean the matériel thoroughly and prepare for use as prescribed in paragraph 13 or 14 as required.

c. *References.*—Detailed information on decontamination is contained in FM 21-40, TM 9-850, and 3-220.

SECTION IV

FUNCTIONING

■ 21. **GENERAL.**—The pressure of the gases generated in the barrel by the powder in the cartridge is exerted in a forward direction against the bullet, driving it through the bore, and in a rearward direction against the face of the bolt. This force drives the bolt to the rear against the pressure of the driving springs. During the rearward movement of the bolt, the empty shell is extracted and ejected, and the driving springs are compressed; during the forward movement, the cartridge is fed into the chamber and fired.

■ 22. **BACKWARD MOVEMENT OF PARTS.**—The cartridge having been fired, the pressure from the explosion is exerted against the chamber recess in the face of the bolt. The chamber pressure reaches its maximum nearly instantaneously but the weight of the bolt is such that by the time its inertia and the resistance of the driving springs are overcome, the

pressure has begun to subside. The bolt moves backward with the cartridge case, and as it passes over the ejector the empty shell is cammed upward and deflected out of the ejector port by the ejector and extractor. The bolt continues to move to the rear until stopped by contact with the guide rod retaining plate. The rearward movement of the bolt against the driving springs expends nearly all the energy imparted by the chamber pressure so that the bolt does not strike heavily against the retaining plate. The sear notch on the under side of the bolt passes over the sear. If the trigger has been released, the sear engages the sear notch (fig. 20) immediately after the bolt starts forward and holds the bolt in its rearward or cocked position. If pressure is continued on the trigger the sear cannot engage the sear notch and the bolt moves forward as described in paragraph 23.

■ 23. FORWARD MOVEMENT OF RECOIL PARTS.—When the trigger is pressed, the connector rotates the sear around the sear pin, causing the rear upper edge of the sear to be depressed, pulling it out of the sear notch of the bolt. The bolt moves forward with considerable momentum imparted by the compressed driving springs. As the front end of the bolt passes over the magazine, it pushes the topmost cartridge into the chamber. The lips of the magazine hold the cartridge in a straight line until the cartridge has cleared the magazine and has entered the chamber. When the cartridge is fully seated, its base protrudes slightly from the chamber. The firing pin in the center of the chamber recess of the bolt (fig. 20) strikes the primer, firing the cartridge. At the instant of firing, the cartridge is inclosed by the chamber and the chamber recess of the bolt, and the rim is engaged by the extractor.

■ 24. ACTION OF GROUPS.—*a. Trigger assembly.*—Squeezing the trigger causes it to rotate around the trigger pin and forces the connector forward. This rotates the sear around the sear pin, causing its rearmost edge to be depressed, withdrawing it from the sear notch of the bolt. Since there is

no provision for semiautomatic fire, only practice will teach the operator how to squeeze the trigger to fire single shots.

b. Housing assembly.—When the retracting handle is pulled backward, the retracting lever pawl rises into the recess in the lower surface of the bolt and engages the pawl notch. Further rotation of the retracting lever causes the pawl to push the bolt to the rear until the bolt passes over the sear and the sear is engaged with the sear notch.

c. Safety features.—(1) When the bolt is forward and the cover is closed, the safety lock on the lower surface of the cover is engaged in the recess in the top surface of the bolt. This positively prevents movement of the bolt in either direction.

(2) When the weapon is cocked and the cover is closed, the safety lock forces the bolt backward off the sear and holds it there. Closing the cover is called "locking the piece" and is so referred to in this manual.

SECTION V

STOPPAGES AND IMMEDIATE ACTION

■ **25. MISFIRE.**—In the event of a misfire, remove the magazine and cock the bolt with a sharp, quick pull on the retracting lever to insure ejection of the misfired cartridge. *Always inspect the chamber and bore after a stoppage to see that it does not contain an unexpended round or any other obstruction.*

■ **26. OTHER MALFUNCTIONS.**—For any other malfunctions remove the magazine and retract bolt as above. Any loose cartridge in the receiver well should fall out of the magazine guide recess. If a cartridge is lodged in the chamber, cock the gun and, *holding the cover down firmly with the left hand*, insert a ramrod or the end of the stock in the muzzle and press the cartridge into the receiver. Do not hammer. If time and conditions permit, it is always better to remove the barrel before attempting to clear the chamber. *On the range this is the only method permitted.*

SECTION VI

SPARE PARTS AND ACCESSORIES

■ 27. **SPARE PARTS.**—*a.* The parts of any submachine gun will in time become unserviceable through breakage or wear resulting from continuous usage. For this reason spare parts are provided for replacement of the parts most likely to fail, for use in making minor repairs, and in general upkeep of the submachine gun. Sets of spare parts should be maintained as complete as possible at all times and should be kept clean and lightly oiled to prevent rust. Whenever a spare part is used to replace a defective part, the defective part should be repaired or a new one substituted in the spare parts set. Parts that are carried complete should at all times be correctly assembled and ready for immediate insertion in the submachine gun.

b. Thirty-round magazines are also issued as spares. The quantity of magazines issued per gun is based on the allowance of ammunition authorized. The allowances of spare parts and of magazines are prescribed in SNL A-58.

■ 28. **ACCESSORIES.**—Accessories include the tools required for disassembling and assembling and for the cleaning and preservation of the gun. They must not be used for any purpose other than as prescribed. There are a number of accessories, the names or general characteristics of which indicate their uses or applications. Therefore, detailed description or method of use of such items is not outlined herein. However, accessories embodying special features or having special uses are described below.

a. Brush, chamber cleaning, M6.—See paragraph 12.

b. Brush, cleaning, caliber .45, M5.—See paragraph 12.

c. Case, accessory and spare parts, M1918.—This is a leather, box-shaped case, approximately 2¼ inches wide, 3½ inches high, and 5½ inches long. It is used to carry spare parts and a number of the smaller accessories.

d. Sling, carbine, caliber .30, M1.—The gun sling is fastened to the swivels provided on the gun (fig. 1). It consists of a web strap, which may be lengthened or shortened as desired to suit the particular soldier using it.

e. *Oiler*.—The oiler is shown in figure 21. It is carried on the side of the housing in a clip.

f. *One-button fabric envelope*, 3 x 3½ inches.—This is a sewed fabric envelope for carrying small accessories.

g. *Magazine loader* (figs. 1 and 24).—This is a welded metal device to facilitate loading magazines.

SECTION VII

INDIVIDUAL SAFETY PRECAUTIONS

■ 29. **GENERAL**.—The submachine gun M3 lacks the safety features which distinguish other small arms (see par. 24c). The insertion of a loaded magazine loads the gun. If the gun is unlocked and cocked, pressure on the trigger will fire it. If the unlocked gun is dropped to the ground or floor, it may fire whether the bolt is cocked or not (see note, par. 32). Therefore, two safety rules should be rigidly enforced in the use of this weapon:

- a. Load the gun only when it is ready to fire.
- b. Unlock the loaded gun only when raised to fire.

■ 30. **BEFORE FIRING**.—a. See that the bolt is clear and clean.

b. Work the bolt back and forth rapidly several times to see that it slides freely on well-oiled guide rods.

c. **Examine** magazines and eliminate faulty ones.

d. See that each magazine is free from dirt and that it is properly loaded.

e. Insert a loaded magazine only when ready to fire.

f. For range practice, insert loaded magazine only on order of the officer in charge of firing.

g. Carry gun locked with bolt forward until ordered to insert magazine. Cock and lock the bolt before inserting the magazine, leave the bolt cocked and locked until it is raised to fire.

h. Keep the finger outside the trigger guard until ready to squeeze the trigger.

■ 31. **DURING FIRING**.—a. From the time the magazine is inserted until the gun is cleared and the clearance checked, keep the gun pointed toward the target whether firing dis-

mounted or from a vehicle. For vehicular firing at moving ground targets, keep the gun locked at all times while the vehicle is moving, except when firing.

b. Habitually lock the gun during lulls in fire.

c. Always check the bore for obstruction after a stoppage.

■ 32. **AFTER FIRING.**—*a.* At CEASE FIRING, and upon halting after each section of a vehicular run, remove the magazine, inspect the chamber to see that no cartridge remains in it, then lock the gun before turning away from the firing point.

b. After the gun has been cleared and checked for clearance, let the bolt forward on an empty chamber and lock the gun.

NOTE.—When a loaded, unlocked gun is dropped the following may happen:

1. If cocked, the sear may be jolted out of the sear notch, discharging the piece.

2. If uncocked, the impact with the ground or floor may throw the bolt far enough backward to clear the magazine. On the return stroke it will push a cartridge into the chamber and probably fire it.

SECTION VIII AMMUNITION

■ 33. **GENERAL.**—The information in this section pertaining to the several types of cartridges authorized for use in the submachine gun, caliber .45, M3, includes a description of the cartridges, means of identification, care, use and ballistic data. (See TM 9-1900.)

■ 34. **CLASSIFICATION.**—Based upon use, the principal classifications of ammunition for this rifle are:

a. *Ball*, for use against personnel and light matériel targets.

b. *Tracer*, for observation of fire and incendiary purposes (not manufactured at present).

c. *Dummy*, for training (cartridges are inert).

■ 35. **LOT NUMBER.**—All cartridges must be identified by lot number before they are fired. (See TM 9-1900.)

■ 36. **GRADE.**—Current grades of existing lots of small-arms ammunition are established by the Chief of Ordnance and are

published in Ordnance Field Service Bulletin 3-5. No lot other than that of current grade appropriate for the weapon will be fired. *Grade 3 ammunition is unserviceable and will not be fired.*

■ **37. IDENTIFICATION.**—*a. Markings.*—The contents of original boxes are readily identified by the markings on the box. Similar markings on the carton label identify the contents of each carton.

b. Color bands.—Color bands painted on the sides and ends of the packing boxes further identify the various types of ammunition authorized for use in this weapon with caliber .45 bolt, barrel, and magazine. The following color bands for cartridges are used:

Ball, caliber .45, M1911—red.

Tracer, caliber .45, M1—green on yellow.

Dummy, caliber .45, M1921—green.

c. Physical characteristics.—When removed from their original packing containers, the cartridge may be identified except as to ammunition lot number and grade by physical characteristics described below:

(1) *Ball.*—The bullet of the ball cartridge has a gilding metal jacket.

(2) *Tracer.*—The bullet of the tracer cartridge has a gilding metal jacket which is painted red for a distance of approximately $\frac{3}{16}$ inch from the tip.

(3) *Dummy.*—There are two designs of dummy cartridges, both of which have tinned cartridge cases. In the one containing an inert primer, a $\frac{1}{8}$ -inch hole is drilled into the body of the cartridge case. In the other, the primer is omitted leaving an opening in the head of the cartridge case thereby obviating the necessity for the $\frac{1}{8}$ -inch hole in the body. The bullet in both instances is the same as that used in the ball cartridge.

■ **38. CARE, HANDLING, AND PRESERVATION.**—*a. Small-arms ammunition* is not dangerous to handle. Care, however, must be exercised to keep the boxes from becoming broken or damaged. All broken boxes must be repaired immediately and all original markings transferred to the new parts of the box.

b. Ammunition boxes should not be opened until the ammunition is required for use. Ammunition removed from the airtight container, particularly in damp climates, is apt to corrode, thereby becoming unserviceable.

c. The ammunition should be protected from mud, sand, dirt, and water. If it gets wet or dirty, wipe it off at once. Light corrosion, if it forms on cartridges, should be wiped off. *However, cartridges should not be polished to make them look better or brighter.*

d. No caliber .45 ammunition will be fired until it has been identified by ammunition lot number and grade.

e. Do not allow the ammunition to be exposed to the direct rays of the sun for any length of time. This is liable to seriously affect its firing qualities.

■ 39. STORAGE.—Store ammunition under cover, if practicable. If necessary to leave it in the open, raise it on dunnage at least 6 inches from the ground and cover the pile with a double thickness of paulin. Dig trenches to prevent water from flowing under the pile.

CHAPTER 2

MANUAL OF SUBMACHINE GUN

SECTION I

MANUAL OF ARMS

■ 40. **GENERAL.**—The manual of the submachine gun M3 is prescribed to provide uniform, simple, safe, and quick methods for handling the gun. A simple and effective manual which can be executed in cadence is included for those occasions when precision is desirable.

■ 41. **CARRYING POSITION.**—Except when otherwise prescribed, the submachine gun M3 is habitually carried with *magazine removed*, stock telescoped, slung over the right shoulder, butt up, receiver throat to the front, the right hand grasping the sling in front of the armpit (fig. 22). For dismounted marches and field exercises, the weapon may be carried slung over either shoulder. When the troops are at ease, the submachine gun is kept slung unless otherwise ordered. When troops are at rest, the submachine gun may be unslung and held in any desired position. In executing attention, the carrying position is assumed. Parade rest and right-hand salute are executed in the normal manner by releasing the grasp of the right hand from the sling.

■ 42. **POSITION OF RAISE ARMS.**—Executed at the command: 1. RAISE, 2. ARMS, or, when other members of the command are executing the manual of the pistol, at the command, RAISE PISTOL. The position is assumed by the gunner from the position of attention. He swings the gun forward with his right hand, grasping it with his left hand over the housing, withdrawing the right arm from between the gun and the sling, extending the stock, and then assuming a position as shown in figure 22. The gunner, standing at attention, grasps the pistol grip with his right hand, forefinger extended above the trigger guard. The stock is under his right arm, the barrel is extending upward to the front in a vertical plane and at an angle of 45°. He steadies the gun by pressing the stock against his right side with his right

upper arm; his left arm and hand are at his side as prescribed for the position of attention.

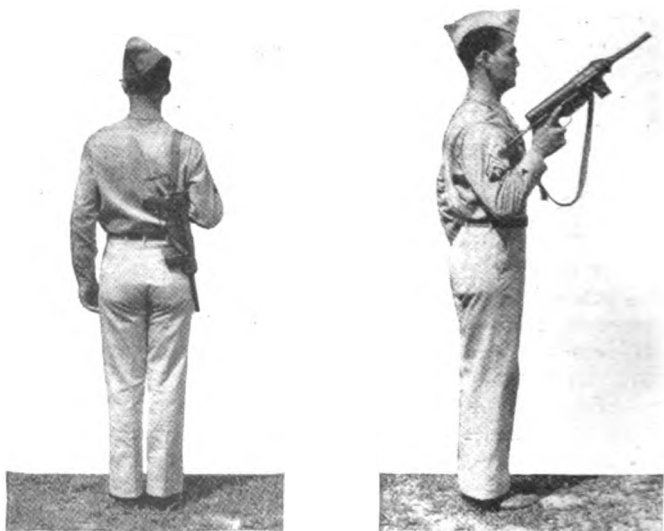


FIGURE 22.—Left, carrying submachine gun M3; right, RAISE ARMS.

■ 43. POSITION OF PORT ARMS.—Executed at the command: 1. PORT, 2. ARMS. The gunner, standing at attention, holds the piece in a vertical plane, parallel to and about 4 inches in front of his body, barrel extending upward to the left at an angle of 45° . The right hand grasps the butt of the stock. The left hand holds the piece at the housing and is opposite to and at the same level at the point of the left shoulder (fig. 23).

■ 44. POSITION OF INSPECTION ARMS.—Executed at the command: 1. INSPECTION, 2. ARMS, or, when other members of the command are executing the manual of the pistol, at the command, INSPECTION PISTOL. The position is the same as PORT, except that the gun has been unlocked, the bolt pulled to the rear, the chamber examined to see if the gun is loaded, and the gun unloaded if found loaded (fig. 23).

■ **45. POSITION OF PRESENT ARMS.**—Executed at the command: 1. **PRESENT**, 2. **ARMS**. The gunner, standing at attention and grasping the stock just above the butt lightly with the right hand and the cover with the left hand, holds the piece 4 inches in the front of the center of his body in such manner that the barrel is vertical, the muzzle up, and the housing to the front. The gunner's right arm should be straight without constraint (fig. 23).

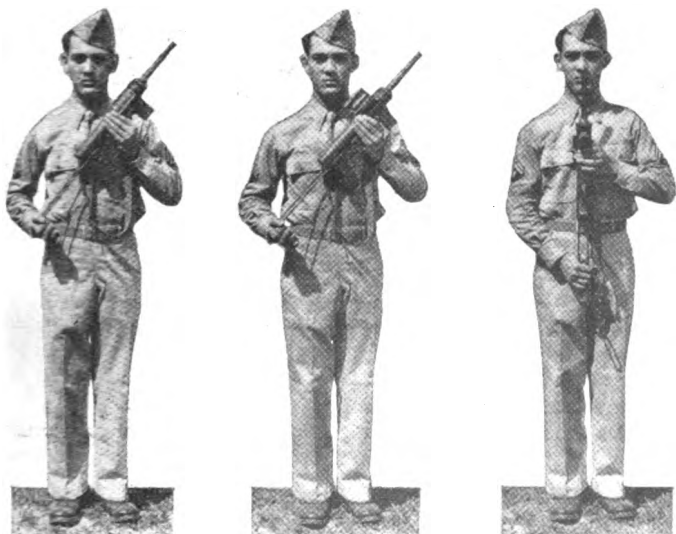


FIGURE 23.—Left, PORT ARMS; center, INSPECTION ARMS; right, PRESENT ARMS.

■ **46. EXECUTION OF MANUAL.**—In describing the execution of the following movements, it is assumed that the stock has been extended and that the magazine has not been inserted in the gun.

a. **RAISE ARMS to PORT ARMS** (in two counts).—(1) Carry the gun diagonally across the front of the body so that the muzzle and the receiver throat are up; at the same time grasp the housing smartly with the left hand.

(2) Move the right hand from the pistol grip to the butt of the stock.

b. PORT ARMS to RAISE ARMS (in three counts).—(1) Remove the right hand from the butt of the stock and grasp the pistol grip with the forefinger extending above the trigger guard and the forearm in front of the stock.

(2) With the left hand still grasping the cover, carry the piece to the position of **RAISE ARMS**.

(3) Drop the left hand smartly to the side.

c. RAISE ARMS to INSPECTION ARMS (in three counts).—(1) Raise the left hand and unlock the gun; pull the retracting handle to the rear, cocking the piece. Glance in the chamber to see if gun is loaded. If loaded, unload it.

(2) Execute **PORT ARMS**.

d. INSPECTION ARMS to RAISE ARMS (in four counts).—(1) Execute the first two movements of **PORT ARMS to RAISE ARMS**.

(2) With the left hand, grasp the retracting handle, pulling it to the rear and with the right forefinger pull back on the trigger. With the left hand, allow the bolt to move forward without shock and lock the gun.

(3) Execute the third movement of **PORT ARMS to RAISE ARMS**.

e. RAISE ARMS to PRESENT ARMS (in three counts).—(1) Execute **PORT ARMS**.

(2) Carry the piece smartly to the position of **PRESENT ARMS**, shifting the right hand from the butt of the stock to the straight portion just above the butt.

f. PRESENT ARMS to RAISE ARMS (in four counts).—(1) Carry the gun smartly to the position of **PORT ARMS**.

(2) Execute **RAISE ARMS**.

SECTION II

LOADING AND FIRING

■ **47. LOADING MAGAZINES.**—*a.* Fit the magazine loader on the top of the magazine. Place the base of the magazine on a firm surface. Push down so that the finger on the loader depresses the follower. Insert a cartridge base first. Lift the loader and push the cartridge all the way in. Push down

on the loader. The finger will bear on the cartridge, depressing the follower. Repeat the operation until the magazine is full (fig. 24).

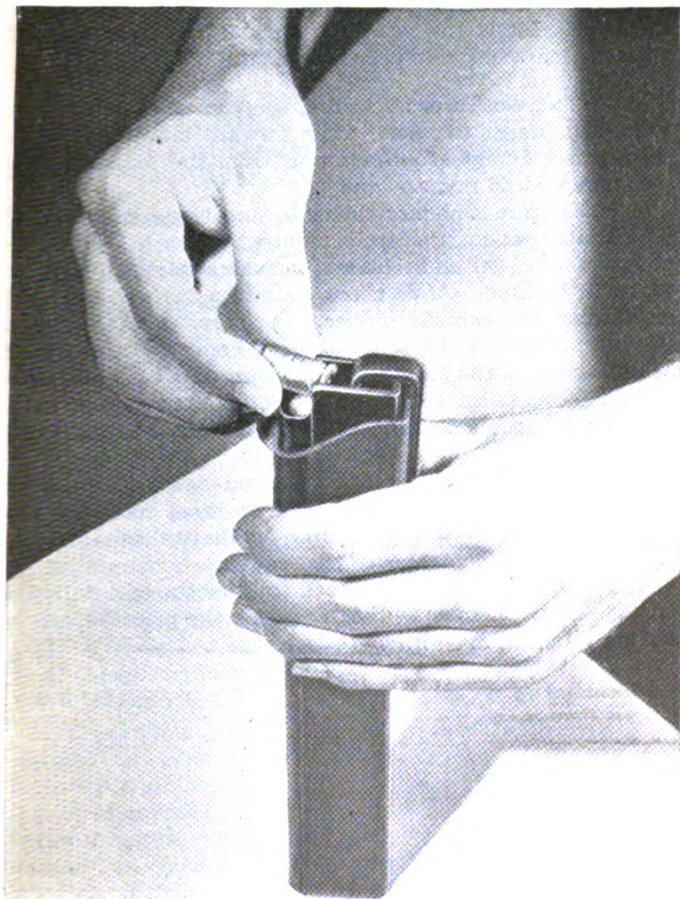


FIGURE 24.—Loading magazine.

b. Avoid use of too much force. If the follower does not depress smoothly, discard the magazine until it can be cleaned and lubricated.

■ 48. **LOADING WEAPON.**—At the command **LOAD**, cock and lock the piece. Insert the magazine and push it firmly upward until the magazine catch clicks into position.

■ 49. **FIRING.**—a. In order to fire, the gun must be unlocked when the trigger is pulled. The forward movement of the bolt feeds a round of ammunition from the magazine into the chamber and fires the gun. .

b. Since there is no mechanism for insuring semiautomatic fire of this weapon, practice is required to teach a gunner to squeeze the trigger and release it in such a way that only one shot will be fired. After a few rounds, a gunner will learn his weapon well enough to release the pressure of the trigger in time to prevent the firing of the second shot. It should be impressed on the gunner at this point that the most effective and economical use of this weapon is to fire single shots. Nearly every round can be made to account for a casualty in combat.

c. In full automatic fire, the weapon has a tendency to move to the right on the first two or three rounds. This tendency is easily controlled and familiarity will give the gunner complete control over his weapon.

d. When the magazine has been emptied the bolt will close on the empty chamber. Cock and lock the piece before inserting a loaded magazine.

CHAPTER 3

MARKSMANSHIP, KNOWN-DISTANCE TARGETS

SECTION I

PREPARATORY TRAINING

■ **50. PURPOSE.**—The purpose of preparatory training in submachine gun marksmanship is to teach the gunner the essentials of good shooting and to develop and fix correct shooting habits before he undertakes range practice.

■ **51. FUNDAMENTALS.**—To become a good submachine gunner, a soldier must be thoroughly trained in the following essentials of good shooting:

- a. Correct sighting and aiming.
- b. Correct range estimation.
- c. Correct positions.
- d. Correct trigger squeeze.

■ **52. PHASES OF TRAINING.**—a. Marksmanship training is divided into the following phases:

(1) Preparatory marksmanship training.

(2) Range practice.

b. Preparatory marksmanship training consists of—

(1) Sighting and aiming exercises.

(2) Range estimation.

(3) Position exercises.

(4) Trigger squeeze exercises.

(5) Marksmanship exercises.

(6) Examination.

c. The submachine gunner will be made proficient in mechanical training before he receives instruction in marksmanship training.

d. A thorough course in preparatory training precedes any range practice. This preparatory training is given to all soldiers expected to fire the submachine gun during range practice, including those previously qualified.

■ **53. METHODS OF TRAINING.**—To insure proper instruction, well-qualified officers and noncommissioned officers are placed

in charge of instruction. Instruction must be given by subject in the proper sequence so that the student will employ what he has been taught when he moves to the next step or phase of training. Brief talks followed by demonstrations by the instructors precede any work by the students. No student progresses from one stage of training to the next stage unless he is qualified. Constant supervision by noncommissioned and commissioned officers, with individual instruction when necessary, is essential. The coach and pupil system of instruction is used whenever a man is in the firing position (FM 21-5). Instruction and exercises are rotated in order to keep up interest and enthusiasm in the class.

■ 54. **EQUIPMENT.**—*a.* Most of the equipment required for preparatory marksmanship training is simple and readily improvised from materials at hand. The following is a list of necessary equipment:

Sighting bar.

Submachine gun.

Sighting disk.

Submachine-gun rest.

Material for blackening sights.

Pencil.

Paper.

Targets E, F, M, and A.

Cleaning and preserving materials.

b. The equipment required for range practice includes, in addition to the items listed above, the materials necessary to construct and maintain target ranges (see sec. IV, ch. 3, and ch. 5), targets, ranges, weapons, vehicles, and range safety equipment.

■ 55. **USE OF SIGHTS.**—*a. General.*—Sights on the submachine gun M3 are not adjustable.

b. Windage and drift.—No correction for windage or drift is necessary for the ranges at which this gun is used. Under 300 yards these factors are negligible.

c. Range.—(1) The weapon is primarily intended for firing at short ranges where quick shooting is required. While its maximum effective range is stated as 200 yards, only a skilled

gunner can deliver effective fire beyond 150 yards (see (2) below).

(2) The trajectory of the submachine-gun bullet is less flat than that of the rifle bullet. It is important that the gunner be taught to allow for this characteristic in aiming and to understand the effect of the trajectory on his line of sight. The following table gives the distance the gunner must raise his point of aim in order to hit the target at various ranges:

Yards 100	150	200
<i>Ft. In.</i> 0	<i>Ft. In.</i> 1 6	<i>Ft. In.</i> 4 2

■ 56. SIGHTING AND AIMING.—*a. General.*—In all preparatory exercises involving sighting and aiming and in all range firing, both sights of the gun are blackened. The blackening is done by holding each sight for a few seconds in the point of a small flame which will deposit a uniform coating of lamp black on the metal. Materials most commonly used for the purpose are carbide lamp, kerosene lamp, candles, shoe paste, and stove polish.

b. First exercise.—This exercise teaches correct sight alignment of the front and rear sights and the correct sight picture when aiming at a target.

(1) Point out the parts of the sighting bar (fig. 25).

(2) Explain—

(a) That the front and rear sights of the sighting bar represent the front and rear sights of the submachine gun.

(b) That the sighting bar is used in the first sighting and aiming exercise because with it small errors can be seen easily and explained to the pupil.

(c) That the eyepiece requires the pupil to place his eye in such position that he sees the sights in exactly the same alignment as seen by the coach.

(d) There is no eyepiece on the submachine gun, but the pupil learns by use of the sighting bar how to align the sights properly when using the submachine gun.

(e) The removable target attached to the end of the sight-

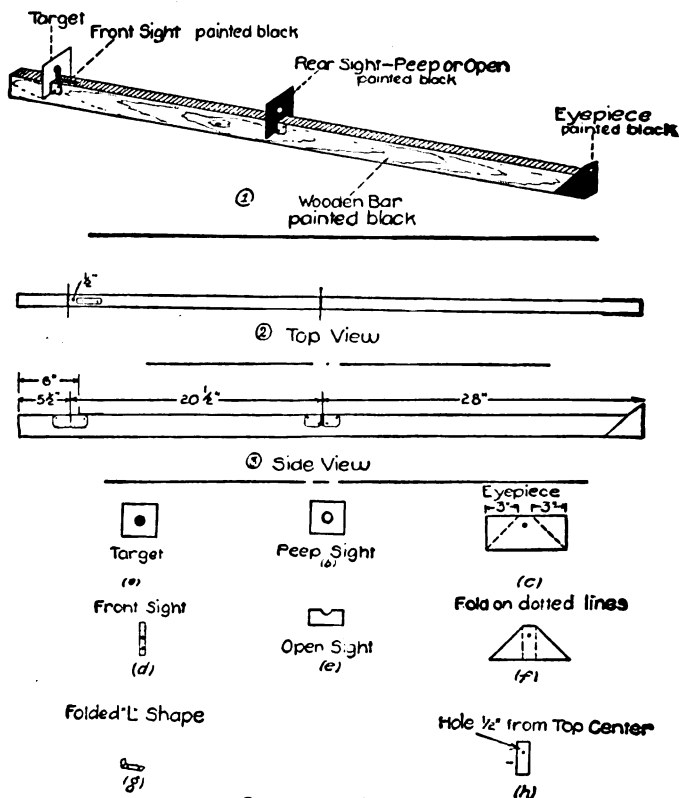


FIGURE 25.—Sighting bar.

Wooden bar—1 by 2 inches by 4 feet 6 inches (approximate).

Eye-piece—Thin metal, 3 by 7 inches; hole, 0.03-inch diameter.

Rear sight—Thin metal or cardboard, 3 by 3 inches; hole in center, $\frac{3}{4}$ -inch diameter.

Front sight—Thin metal, $\frac{1}{2}$ by 3 inches, bent L-shape.

Target—Thin metal or cardboard, 3 by 3 inches, painted white—black bull's eye, $\frac{3}{4}$ -inch diameter in center.

Slits—1 inch deep, may be lined with thin metal strips.

ing bar is a simple method of readily aligning the sights on the bull's-eye.

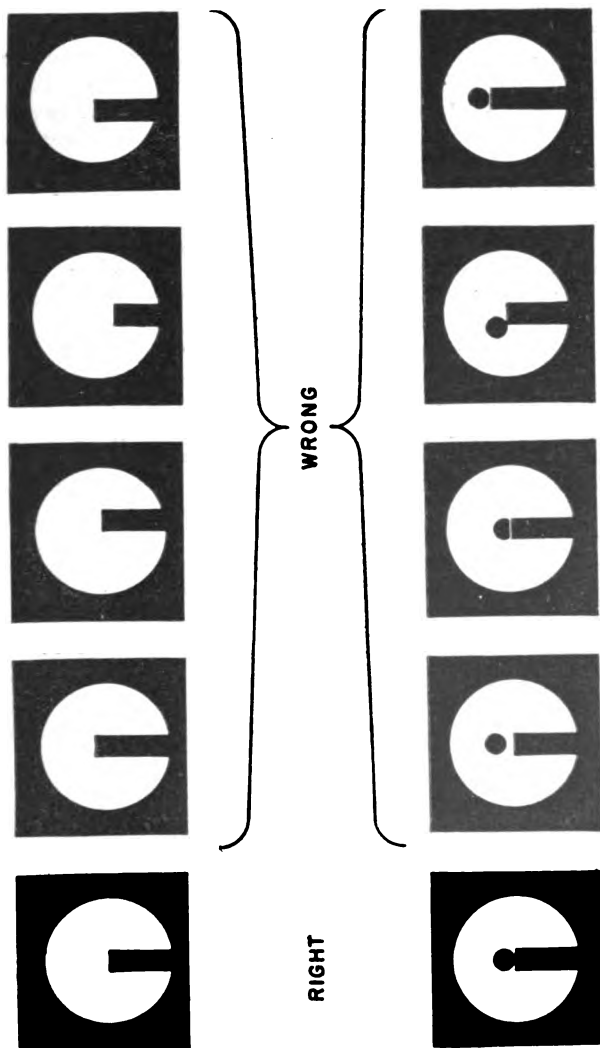


FIGURE 26.—Sight alignment and aim.

(f) That there is only one correct sight alignment and one correct aim or sight picture.

(3) Explain the peep sight and show each man the illustration of correct sight alignment (fig. 26).

(4) Remove the target from the sighting bar adjust the sights to show correct alignment, and have each man look through the eyepiece.

(5) Adjust the sights of the sighting bar with various small errors and have each man try to detect the error.

(6) Describe the correct aim and show each man an illustration of the correct aim (fig. 26). Explain that the top of the front sight is seen through the middle of the circle and just touches the bottom of the bull's-eye so that all of the bull's-eye can be clearly seen (fig. 26).

(7) Explain that the eye should be focused on the bull's-eye in aiming. Question the men to find out if each understands what is meant by focusing on the bull's-eye.

(8) Adjust the sights of the sighting bar and the removable target so as to illustrate a correct aim and require each man to look through the eyepiece.

(9) Adjust sights and the movable target to illustrate errors and require each man to attempt to detect the error.

(10) After completing the exercises, place men in pairs and repeat the exercises by the coach-and-pupil method.

c. Second exercise.—(1) Blacken the submachine gun sights, place the gun in the rest (fig. 27), and point it at a blank piece of paper mounted on a box 50 feet away.

(2) Without touching the gun or the rest take position (fig. 27), look through the sights, and by means of voice or signal cause a marker to move a small disk until the bottom of the bull's-eye is in correct alignment with the sights (fig. 26). Call "Hold" to the marker, move away from the sights, and cause each man to look through the sights to observe the correct aim.

(3) Have the marker move the disk. Cause the pupil to take position at the gun, look through the sights, and cause the marker to move the disk until correct aim is obtained. Check the aim and point out errors.

(4) Align the sights with various errors and cause the pupil to look through the sights to detect the error.

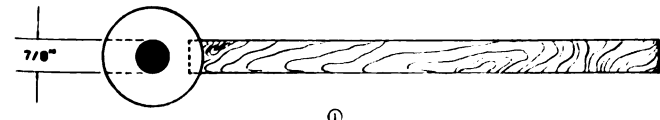
d. Third exercise.—This exercise is designed to show the importance of uniform aim. At 50 feet and with a small bull's-eye a good group of three marks can be covered by the unsharpened end of a lead pencil.

(1) Blacken submachine gun sights, place gun in the rest, point it at a blank piece of paper mounted on a box 50 feet away, and have pupil take position at the gun as in *c* above.

(2) The pupil directs movement of a disk until the correct aim is obtained and calls, "Hold."

(3) The coach commands: **MARK.** The marker, without moving the disk, makes a dot on the paper by inserting a sharp-pointed pencil in through the hole in the center of the bull's-eye. He then moves the disk.

(4) Have the above operation repeated twice. Number the dots 1, 2, 3, and put pupil's name beside the group. Point out errors.



② **FIGURE 27.**—Submachine gun rest and sighting disk.

■ **57. TRIGGER SQUEEZE.**—*a. Importance.*—The most important thing in shooting an individual weapon is the trigger squeeze. That is, you must squeeze the trigger in such manner that you will not know when the gun is going off. Misses and poor shots are caused by spoiling the aim by jerking the trigger, or **flinching**.

(1) *Do the following:*

(a) Aim at the target.

(b) Take up the slack.

(c) Continue to aim at the target and squeeze the trigger with a steady increase in pressure and follow through.

(2) *Do not*—

(a) Yank the trigger.

(b) Increase pressure when sights are not on the target.

(c) Shut your eyes and yank the trigger.

(d) Flinch.

b. *Calling the shot*.—Always notice where the sights are pointed when the bolt goes forward and call out where you think the shot hit or, in simulated firing, where it would have hit. Inability to call the shot shows that the firer did not know where the gun was pointed, that is, he shut his eyes and pulled the trigger.

c. *Breathing*.—Hold your breath while aiming and squeezing. Take a breath, let out a little air, and then stop breathing.

d. *Exercises*.—(1) Explain trigger squeeze and breathing. Make sure each man knows what is meant by trigger squeeze and how to stop breathing while aiming. Question them.

(2) Have pupils take prone positions, breathe properly, and squeeze the trigger. Watch for evidence of yanking the trigger.

(3) Next have students assume the prone position, aim at a target, and squeeze the trigger. *Make them call their shots*.

■ 58. RANGE ESTIMATION.—a. *General*.—(1) The submachine gunner must be well trained in hasty range estimation and its application to marksmanship. Because the weapon is normally employed quickly and at short ranges, the following methods of range estimation are used:

(a) Estimation by eye.

(b) Observation of fire.

(2) The usual method of range estimation is by eye. The submachine gunner is taught to estimate accurately and fix permanently in his mind two distances, 50 yards and 100 yards. Targets at other ranges are estimated in comparison with these units of measure.

(3) When the effect of a shot or bursts of shots can be seen by the gunner, he changes his point of aim by estimation to increase the accuracy of his fire.

b. Exercises.—The following exercises can be used as guides in instructing the submachine gunner in range estimation. Ranges used are short and at no time greater than 200 yards. The exercises are especially suitable for class exercises.

(1) **No. 1.**—(a) *Purpose.*—To familiarize the gunner with the units of measure, 50 yards and 100 yards.

(b) *Method.*—The units of measure, 50 yards and 100 yards, are staked out on the ground up to 200 yards. The gunner is required to become familiar with the appearance of the unit of measure from the prone, kneeling, and standing positions on the ground, and from a moving vehicle in his normal riding position.

(2) **No. 2.**—(a) *Purpose.*—To give practice in range estimation.

(b) *Method.*—From a suitable point, ranges are previously measured to normal targets within 200 yards. The gunner is required to estimate the ranges to the various objects as they are pointed out by the instructor and record his estimation on a sheet of paper. At least one-half of the estimates are made from the kneeling and sitting positions. Thirty seconds are allowed for each estimate. When all the ranges have been estimated, the paper is checked by the instructor and the true ranges given to the student.

■ **59. POSITIONS.**—a. *General.*—The positions from which the submachine gun may be fired are standing, sitting, kneeling, and prone. Each gunner is given sufficient practice to enable him to assume all positions rapidly and efficiently.

b. *Standing* (fig. 28).—This is the normal firing position. Take it as follows:

(1) Half face to the right.

(2) Point left toe toward target.

(3) Plant right foot firmly on the ground in the normal walking position.

(4) Lean slightly forward, placing about two-thirds the weight of the body on the left foot.

(5) Grasp magazine receiver with the left hand and pistol grip with the right hand.

(6) Place butt of piece on the shoulder and twist the body to the left to shove the right shoulder strongly against the butt of the piece in the direction of fire.

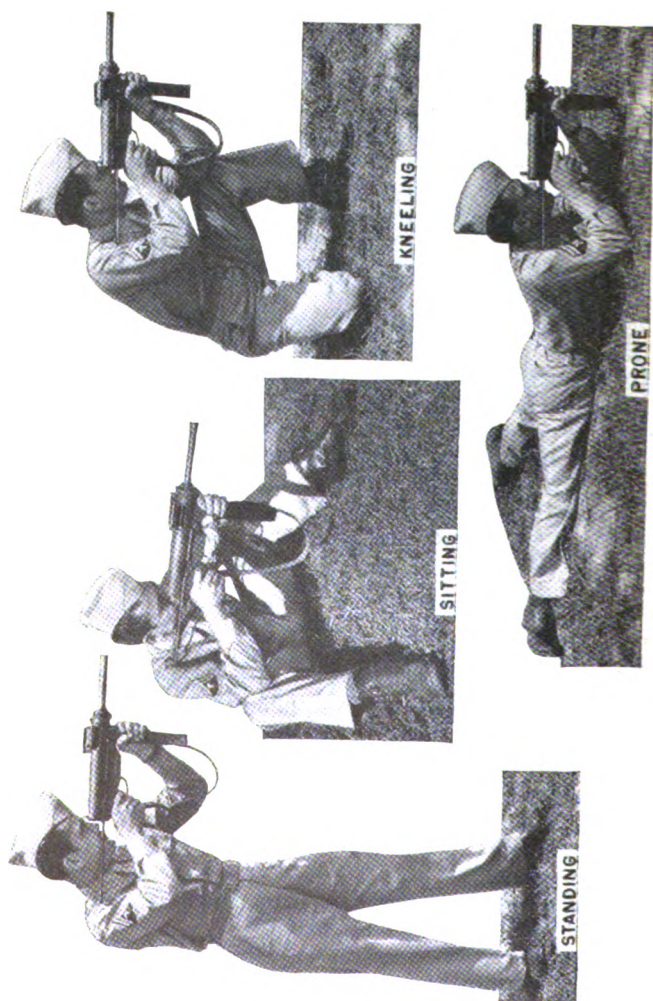


FIGURE 28.—Positions.

(7) Hold arms in unconstrained position, right elbow dropped slightly or shoulder high, left elbow well under the piece.

(8) Press cheek against stock. The recoil is slight for any one shot but in automatic fire, an accumulation of successive recoils will tend to push the shoulder backward, if the gunner is not well braced for the thrust, and the gun will move off the target.

c. *Sitting* (fig. 28).—(1) This position is best used when firing from ground that slopes to the front.

(2) Take position as follows:

(a) Face the target, half face to the right, and sit down.

(b) Place feet far enough apart to give the body lateral support. Do not place them so far apart that the elbows cannot rest on top of the legs. Knees should be no farther apart than the feet.

(c) Point toes forward, relax ankles, and put weight well forward.

(d) Bend body forward from hips. Keep back straight.

(e) Left elbow is under the gun, and forward of the left knee.

d. *Kneeling* (fig. 28).—The kneeling position affords a steadier aim than does the standing position and is useful when the gunner can crouch behind a rock, log, or other protection. It is also useful on ground that slopes upward. To take the position—

(1) Half face to the right, kneel on the right knee, and sit on the right foot.

(2) Point left toe at the target.

(3) Make left lower leg vertical.

(4) Grasp gun as in standing position.

(5) Place left arm on left knee, point of elbow a few inches forward of the knee. This helps to throw the weight forward.

(6) Hold right elbow just below or even with the shoulder and place butt of the stock on the shoulder.

(7) Relax right hand; place cheek against the stock. This position is similar to that for the rifle (FM 23-5) except that the gunner is faced more directly toward the target.

e. *Prone* (fig. 28).—This position is the steadiest one and should be used whenever time and terrain permit, particularly

for firing at ranges over 200 yards. To take the position—

(1) Take prone position on ground with body inclined to left of line to target.

(2) Spread legs apart comfortably, toes out. Keep spine straight.

(3) Place left elbow under the gun, left hand grasping the magazine receiver.

(4) Place right elbow out from body so right shoulder is not hunched up.

(5) Seat butt of the piece in the pocket formed by the shoulder; place cheek against the butt of the piece.

(6) Relax. This position is similar to the prone position with the rifle except that the gunner faces more directly toward the target so as to force his right shoulder forward against the butt of his gun.

■ 60. MARKSMANSHIP EXERCISES.—*a. First.*—(1) *Purpose.*—This exercise teaches the gunner to pick up his target by any slight movement in his general field of vision and, from a standing position, to move the gun rapidly to the target with sights properly aligned.

(2) *Method.*—Place the gunner in the standing position at *A* (fig. 29), gun cocked and unloaded; targets are partially concealed and all turned with edges toward the gunner. The gunner is instructed to look generally over his field of fire by shifting his eyes slightly, without focusing his eyes on any particular object, until he sees one of the targets move. The target is exposed at the order of an instructor who gives the gunner no advance indication of which target is to be used. The gunner brings his line of aim on this target at the proper height and simulates firing one shot. Without moving the gun from his shoulder, the gunner looks over his field of fire until he sees another target move and then simulates firing a shot at that target. Targets initially remain exposed about 5 seconds; this is later reduced to 3 seconds. As skill develops, the gunner moves forward about 10 yards and simulates firing short bursts of 2 to 4 shots on each target of groups *C* and *D*. At first these targets remain exposed for 10 to 15 seconds; later this is reduced to 5 seconds.

b. Second.—After the exercise described in *a* above has been mastered, the gunner goes through the dismounted prac-

the course as prescribed in section II, using no ammunition. This is repeated until he can go through the entire course easily in the allotted time.

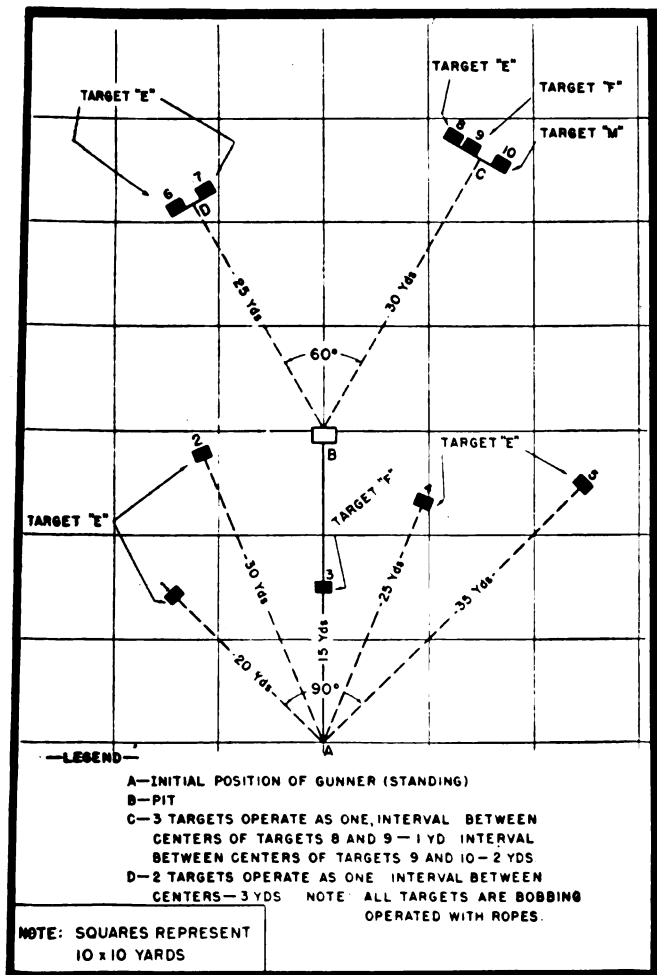


FIGURE 29.—Dismounted practice course.

c. Third.—After the gunner has fired the dismounted course, he is trained in the vehicular courses (figs. 33 and 34) without ammunition. He repeatedly practices the vehicular courses before being permitted to fire them with ball ammunition.

■ 61. EXAMINATION.—*a.* Prior to the date of actually firing the submachine gun for record, each gunner so firing is required to pass the examination of preparatory training shown on the form in paragraph 112. The date of this examination is recorded on each individual's qualification record card.

b. The questions given herein are examples for the examination. Men are required to explain them in their own words or demonstrate them by their own actions. These questions are given only as a guide. Any pertinent question under the subjects listed on the form in paragraph 112 should be asked.

Q. Name the parts of the weapon as I point to them.

A. Pupil names each part as pointed out.

Q. How many rounds of ammunition can be placed in the magazines?

A. 30 rounds.

Q. Show me the extractor (ejector) (retracting lever pawl).

A. Pupil shows the instructor the part indicated. If disassembly is necessary, he disassembles the piece.

Q. What is the first thing to do when replacing the housing assembly in the receiver?

A. See that the magazine catch is in the assembled position.

Q. When should the weapon be loaded?

A. Only when you are ready to fire.

Q. You are on the range. What do you do at the command LOAD?

A. Unlock the gun. Cock it. Lock the gun. Insert the magazine.

Q. On the range should a loaded magazine be inserted with the bolt forward? Why?

A. No. The gun should be cocked and locked before the magazine is inserted, so that mishandling of the retracting lever will not cause the piece to fire accidentally.

Q. In case of misfire what should first be done?

A. Remove the magazine. Pull the retracting lever sharply to the rear to eject the misfired cartridge.

Q. Demonstrate the standing (sitting) (kneeling) (prone) position.

A. Pupil demonstrates the required position.

Q. Demonstrate how to load a magazine.

A. Pupil demonstrates method of loading a magazine, using the loading device.

Q. What parts of the gun should be cleaned after firing each day?

A. The bore and chamber, and all parts and surfaces of the receiver, the bolt, and groups with which powder gases come in contact.

Q. At a range of 200 yards, where is the point of aim in relation to the target?

A. Four feet 2 inches above the target.

SECTION II

COURSES TO BE FIRED

■ **62. ARMY REGULATIONS APPLICABLE.**—AR 775-10 prescribes details as to who will fire and ammunition allowances.

■ **63. INSTRUCTION PRACTICE.**—*a.* The following table prescribes the firing in instruction practice in the order followed by the individual soldier. The table is fired three times for instruction. Additional firing may be done if ammunition allowances permit.

b. There is a 5-second interval after the completion of phase A, at which time the timer blows a whistle and the firer starts walking from position A to position B. Phase B starts 10 seconds after the whistle.

QUICK FIRE—TARGETS E, F, M, AND A

Phase	Type of fire	Position	Range	Time	Shots
A.....	Single shot or automatic.	Standing....	15-35 yards..	Each target exposed 3 seconds.	10 shots, 2 per target.
B.....	Automatic bursts of 3.	Standing and sitting or kneeling.	25-30 yards .	Each group exposed 5 seconds.	15 shots, 3 per target.
C.....	Single shot.	Prone.....	200 yards....	No limit.	10 shots, Target A, rifle target.

*At least 6 shots will be fired from the sitting or kneeling position.

c. Phase C is fired after completion of phases A and B. It is fired on the rifle range under procedure prescribed in FM 23-5. It is not fired for record but targets are scored.

■ 64. RECORD PRACTICE.—The table used for instruction practice, except for firing from the prone position, Phase C, is fired once for record.

SECTION III

CONDUCT OF RANGE PRACTICE

■ 65. GENERAL.—Organization commanders are responsible for conducting the range practice of their organizations in accordance with the provisions of this manual and applicable Army Regulations. All firing is done under the direct supervision of a commissioned officer. No person is permitted to start range practice until after he has successfully passed the gunner's examination prescribed in preparatory training.

■ 66. PROCEDURE (fig. 29).—*a. Preparation.*—The officer in charge of firing, the timer, and five target operators take position in rear of point A (fig. 29). The assistant timer and two target operators take position in the pit at point B (fig. 29). The gunner takes his place at the initial position (point A) (fig. 29), facing toward the pit, with a magazine loaded with 25 rounds of ammunition. The officer in charge of firing commands: **LOAD**. At this command the gunner unlocks the gun, cocks the bolt, and locks the gun. He then inserts the magazine, assumes the position of **RAISE ARMS**, and calls, "Ready."

b. Phases.—After the gunner calls "Ready," the officer in charge of firing blows his whistle to initiate phase A. At this signal, the gunner unlocks his gun and assumes the standing firing position.

(1) *Phase A.*—(a) Three seconds after the starting whistle, the targets in group A (targets 1 to 5, inclusive) are exposed in irregular order, one at a time, for 3 seconds each. Three seconds after one target disappears, another appears. The targets are controlled from in rear of the gunner as explained in section IV. The officer in charge of firing designates the target to be exposed by showing a number of

fingers equal to the number of the target, for example, three fingers for target No. 3. The timer informs the target operator by hand signal when to expose the target and when to withdraw it. The gunner is allowed two shots per target in this phase, which must be fired separately or automatically during a single exposure of the target. The standing position is used. The gunner may keep the gun at his shoulder at all times.

(b) Five seconds after the fifth target disappears, the timer blows his whistle to initiate phase B.

(2) *Phase B.*—(a) When the timer's whistle sounds, the gunner starts walking toward the pit (B). Ten seconds after the whistle signal, target group C (or D) is exposed for 5 seconds, during which time the gunner fires a burst of three shots at each target of the group. Five seconds after the target group C (or D) disappears, the remaining group D (or C) is exposed for 5 seconds, during which time the gunner fires his remaining ammunition.

(b) Between exposures of group C (D) and group D (C), the gunner may remain halted or he may continue to walk forward, but he may not advance beyond a barrier just short of pit (B).

(c) In phase B the gunner may fire standing or kneeling.

(d) The targets are controlled from the pit (B) as explained in section IV. An assistant timer, located in the pit, selects the order of exposure of groups C and D and is responsible that the time intervals after the timer's whistle sounds are as prescribed in (1) above.

(3) *Phase C* (not to be fired for record).—This firing is included to emphasize precise laying and to give practice in firing at the longer ranges which will frequently be used in combat. It is fired on the rifle range and procedure for rifle range firing as prescribed in FM 23-5 will govern. Ten shots are fired at the standard A target. The prone position is used and no time limit is prescribed.

c. *Action on completion of firing.*—Upon completion of the firing, the gunner removes the magazine, clears gun, and reports that his gun is clear. This fact is verified by an officer or noncommissioned officer before anyone is permitted to move in front of the gun.

d. Timer.—(1) An officer or noncommissioned officer times each run. He is responsible for signaling for the exposure and withdrawal of each target in group A at the proper time intervals and for the second whistle signal prescribed in b (1) above.

(2) An assistant timer in the pit (B) (fig. 29) is responsible for the exposure and withdrawal of target groups C and D according to the time intervals prescribed in b (2) above.

e. Coaches.—(1) *Instruction practice.*—Considerable time and effort can be saved if well-qualified coaches are used at firing points in instruction practice to instruct the gunners. As all fire of phases A and B is timed, and as the run is not interrupted once it is started, best results are obtained by having the coach observe the actions of the gunner during each run and then, after the targets are marked, having both gunner and coach report to a designated place where the coach points out errors and gives the necessary instruction to prevent their repetition on the next run. Prior to, during and after the run, coaches require gunners to employ habitually all practical safety measures.

(2) *Record practice.*—Coaching is permitted during record practice.

f. Possible score.—100 points.

g. Form for score card.—See paragraph 112.

h. Classification.—The individual classification to be attained and the minimum aggregate scores required for qualification are as prescribed in AR 775-10.

■ 67. RANGE FIRING.—*a. Marking, scoring, etc.*—(1) The targets are designated 1, 2, 3, 4, and 5 from left to right in group A; 6 and 7 in group D; and 8, 9, and 10 in group C (see fig. 29). The number of men detailed as markers is left to the discretion of the officer conducting the firing; normally they will be the men who pull the targets in phase A. The markers take position in rear of position A (fig. 29), and await the completion of phase B. After phase B is completed, they run to their designated targets, examine them, and face the scorer. One noncommissioned officer detailed as scorer waits at a convenient place. The markers then call out in numerical order the hits or misses; for example, No. 1, a hit or two hits; No. 2, a miss. When so instructed by the officer

in charge of firing, the markers cover any shot holes with pasters. Two markers then run to groups D and C, respectively, mark the shots, call, and paste them. (For marking for phase C see FM 23-5.)

(2) During record practice, scores are recorded by a non-commissioned officer of a different organization, if practicable, under the supervision of the officer in charge of firing, who personally checks the hits and misses on the targets, checks the score card, authenticates it, and retains all cards in his personal possession except while the man is actually firing.

b. Value of hits.—(1) *Phases A and B.*—Each target hit counts 5 points, and each hit on any target (not to exceed two for phase A and three for phase B) counts two points.

(2) For phase C, hits are scored as for rifle marksmanship, FM 23-5.

c. Defective cartridges and malfunctions.—If a defective cartridge or malfunction causes an interruption of the fire, the firer assumes the position of RAISE ARMS, and indicates this fact to the officer in charge of firing, who commands: **CEASE FIRING**, and time is stopped. The malfunction is reduced. If the stoppage occurs in phase A before the first shot is fired on any particular target, the full time of 3 seconds is allowed. If the stoppage occurs after the first shot is fired, 2 seconds are allowed. If the stoppage occurs in phase B, the unconsumed portion of the time allowed for that target, plus 1 additional second, are allowed. When ready to resume firing after a stoppage, the firer informs the officer in charge of firing and assumes the appropriate firing position with targets *not* exposed. The officer in charge of firing signals the timer to expose the target and timing is resumed from the instant when the target or group of targets is completely exposed.

SECTION IV

TARGETS, RANGES, AND RANGE PRECAUTIONS

■ 68. **TARGETS** (fig. 30).—*a.* Target F is a drab silhouette representing a prone figure.

b. Target E is a drab silhouette representing a kneeling figure.

c. Target **M** is a drab silhouette representing a standing figure. It is in two parts, the upper is target **E** and the lower is a trapezoidal piece whose upper edge is placed closely against the lower edge of target **E**.

d. Target **A** is the right target **A**.

■ 69. CONSTRUCTION OF RANGE.—*a. Location.*—The course for phases **A** and **B** may be laid out on any ordinary terrain, preferably with some grass, weeds, and low underbrush.

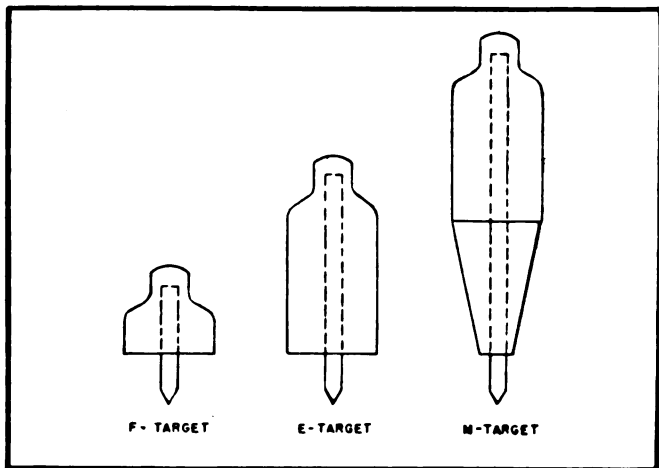


FIGURE 30.—Targets.

Targets may be partially concealed or may be near possible concealment in order to represent as nearly as practicable actual enemy groups but they must be readily discernible to the gunner.

b. Lay-out.—(1) The course is laid out as shown in figure 29. Distances and targets are as indicated in the figure. There are two groups of targets, each necessary for one phase of the firing. Group **A** is a group of five targets, four kneeling (**E**) and one prone (**F**), which are engaged from position **A**. Group **B** consists of two groups (**D** and **C**) (fig. 29), one to the left front consisting of two kneeling targets (**B**); and one to the right front consisting of one standing

target (M), one kneeling (E), and one prone (F). In group (B), the whole group (C or D) operates as a unit in appearing and disappearing.

(2) The pit consists of an emplacement of concrete (or other suitable material) proof against .45 caliber ammunition, with suitable rear and overhead cover but with an opening in front. It is about 3 feet by 6 feet, with the floor at least 3 feet in the ground and the roof not over 1 foot above the level of the ground. It should hold two men and the necessary equipment to control the targets of groups C and D.

(3) If surveying instruments such as transit or aiming circle are available, the angles from A and B (fig. 29) may be readily laid out. These angles may be laid out with a tape measure as follows:

(a) Drive a stake at point A, 30 yards from the pit.

(b) Along line AB drive a stake 10 yards from A. From this stake along a line at right angles to AB lay off distances of 30 feet and $12\frac{1}{2}$ feet in both directions and drive four stakes. Lay off from point A on lines through these five stakes the distances to the targets as shown in figure 29.

(c) Drive a stake 10 yards from point B in prolongation of line AB. From this stake along a line at right angles to line AB lay off distances of $17\frac{1}{2}$ feet in both directions and drive stakes. Lay off from point B on lines through these two stakes the distances to point C and D as shown in figure 29.

(4) For phase C, use regular rifle range.

c. Operation.—(1) General.—All targets are bobbing targets, that is, they are so arranged that they can be fully exposed to the firer, or turned so that only the edge of the target points toward the firer during the time that the target is not exposed.

(2) (a) Group A.—Each target in this group must be capable of being operated individually from in rear of the firing point. This can be done with two ropes to a target, or by one rope only if a spring arrangement is used to hold the target with only the edge exposed. The use of one rope, which is run through a pipe, to each target will prevent the gunner from knowing which target is to be exposed

next. If visible ropes are used, they must be kept tight during the time the gunner is at the firing point.

(b) *Group B.*—In this group, the targets at **D** and at **C** each operate as a unit. For example, when the group at **D** is operated, both the **E** targets are exposed and withdrawn together. The targets are operated from the pit (**B**) (fig. 29). Other details are as in (a) above.

(3) *Method of signaling.*—As the officer in charge, the timer, and the target operators are in rear of the gunner (in phase **A**), the officer can signal the target he desires to be exposed next by the number of fingers he exposes. (See par. 66 for numbering of targets.)

d. *Artificial butts.*—If an artificial butt is constructed as a bullet stop, it should be of earth not less than 30 feet high with a slope of not less than 45°. It should extend about 10 yards beyond the lateral limits of firing and should be as close to the target as practicable. The slope should be sodded.

e. *Hills as butts.*—A natural hill to form an effective butt should have a slope of not less than 45°. If originally more gradual, it should be cut into steps, the face of each step having that slope.

f. *Numbering targets.*—Each target should be designated by a number.

■ **70. RANGE PRECAUTIONS** (see also pars. 29 to 32 and 47 to 49).—During firing, all personnel, including marking details, must be in safe positions. The necessary range guards are posted and danger flags prominently displayed before firing begins. Men on the ready line will keep their guns unloaded, with bolts forward and locked. There must be no firing until so ordered by the officer in charge. The provisions of AR 750-10 must be complied with during all range firing.

CHAPTER 4

MARKSMANSHIP, MOVING GROUND AND AIR TARGETS

SECTION I

MOVING GROUND TARGETS

■ **71. GENERAL.**—*a.* All units armed with the submachine gun will be trained to fire at moving targets, both vehicular and personnel. Normally such fire will be delivered at short ranges in short bursts of fire. The high rate of fire and ability of the submachine gunner to move the trajectory of fire at will make the submachine gun particularly effective against moving personnel, either individual or in groups. Training of the submachine gunner must enable him to employ his gun effectively and quickly. To this end he must be trained in the proper use of sights and methods of leading at short ranges.

b. Moving targets are seldom exposed for long periods and can be expected to move at maximum speed during periods of exposure. Moving personnel is especially difficult to hit. Since the submachine gun M3 has fixed sights, some familiarization is necessary to teach the gunner how to hold the gun at longer ranges than 100 yards.

■ **72. LEADS.**—Targets that cross the line of sight require the gunner to aim ahead of the target so that the bullet and target will meet. The distance ahead of the target is called the "lead." Targets which approach directly toward the gunner or recede directly from the gunner require no lead. For personnel targets moving across the line of sight, the point of aim should be slightly in front of the body and the lead corrected by observation of the fire.

■ **73. DETERMINATION OF LEADS.**—The lead necessary to hit a moving vehicle is dependent upon the speed of the target, the range to the target, and the direction of movement with respect to the line of sight. Moving at 10 miles an hour, a vehicle moves approximately its own length of 5 yards in 1 second. The velocity of a bullet from the submachine gun

is approximately 900 feet or 300 yards in 1 second. Therefore, to hit a vehicle moving at 10 miles an hour at a range of 300 yards, the lead should be 5 yards. At a speed of 20 miles an hour the lead should be 10 yards.

■ **74. APPLICATION OF LEADS.**—*a.* Leads are applied by using the length of the target as it appears to the gunner as the unit of measure. This eliminates the necessity for corrections due to the angle at which the target crosses the line of sight, because the more acute the angle the smaller the target appears and the less lateral speed it attains.

b. The following lead table for vehicles is furnished as a guide.

Miles per hour	Range	
	100 yards or less	200 yards
10	$\frac{1}{2}$ TL	$\frac{3}{4}$ TL
20	$\frac{3}{4}$ TL	1 $\frac{1}{4}$ TL

■ **75. TECHNIQUE OF FIRE.**—*a.* The following technique is used by the gunner for firing at moving targets:

(1) *Approaching or receding targets.*—The gunner holds his aim on or above the center of the target (depending upon the range) and fires in short bursts.

(2) *Crossing vehicular targets.*—The gunner estimates the proper number of leads, aligns his sights on or above the bottom of the target at its rearward point (depending upon the range), swings straight across the target to the estimated lead, and fires short bursts of fire keeping the weapon at the proper lead.

(3) *Crossing personnel targets.*—The gunner takes aim slightly in front of the center of the body of the target with proper adjustment for range and fires short bursts. The lead and range are changed appropriately after observation of the effect of the bursts.

b. The high rate of fire of the submachine gun allows the gunner to spray the target with fire and improve his lead

and range estimation by actual observation of the effectiveness of his fire.

■ 76. **PLACE IN TRAINING.**—Firing at moving targets with service ammunition should follow instruction in known distance firing and firing of the dismounted practice course.

SECTION II

AIR TARGETS

■ 77. **GENERAL.**—Combat arms take the necessary measures for their own immediate protection against low flying hostile aircraft. All available weapons are normally employed in this defense. Consequently all units armed with the submachine gun will be trained in the use of this weapon against air targets. The low muzzle velocity, short effective range, and the tactical employment of the submachine gun are factors which mitigate against its effective use on air targets. The submachine gun is issued as an individual weapon, and more effective vehicular weapons, such as the caliber .30 and caliber .50 machine guns, are available and will be employed for fire at aircraft. In comparison with these other weapons, submachine-gun fire is relatively ineffective against hostile aircraft. Proper training in the use of sights and methods of leading will increase the effectiveness of fire and are essential phases of the training of the submachine gunner. Application of the fundamentals of firing against moving ground targets is satisfactory for training the submachine gunner in firing against air targets. Special use of sights and leads for air targets are included in paragraphs 78 to 82, inclusive.

■ 78. **SIGHTS.**—Hostile airplanes move so rapidly that considerable practice is necessary to learn efficient sighting.

■ 79. **LEADS.**—In order to hit an air target in flight, it is necessary to aim an appropriate distance ahead of it and on its projected path of flight so that the target and the bullet will meet. This distance ahead of the airplane is called "lead." A lead must be applied to all firing, except

when the target is at an extremely close range (100 feet), when it is diving directly at the gunner, or flying directly from him.

■ 80. DETERMINATION OF LEADS.—*a.* The lead necessary to engage any target depends upon—

- (1) Speed of the target.
- (2) Range to the target.
- (3) Time of flight of the bullet.

(4) Direction of flight of the target with respect to the line of fire.

b. When a target appears, it is impossible for submachine gunners to consider all the factors listed above and to compute accurately the lead required for firing. Use of a quick rule of thumb and experience and proficiency in firing are essential.

c. Based on an average airplane of 30 feet in length moving at 400 miles an hour, the airplane moves 20 times its own length in 1 second. This velocity of a bullet from the submachine gun is approximately 900 feet or 300 yards in 1 second. Therefore, to hit an airplane moving across the front at 400 miles an hour at a range of 900 feet, the aiming point of the gunner is 20 leads in front of the airplane, and at a range of 450 feet the aiming point is 10 leads in front of the airplane.

d. Battle experience shows that it is far better to overestimate leads than underestimate them. If you shoot too far ahead of the airplane, it may fly into your fire. If you underestimate the lead, the airplane is sure to escape.

■ 81. APPLICATION OF LEADS.—*a.* Since it is impracticable for the submachine gunner to estimate accurately the speeds of and ranges to attacking airplanes, a general rule is given for firing at air targets. Application of this rule by the individual, coupled with the proper fire distribution of other weapons, will form a mass of fire of which some portion will be effective against the air target.

b. The lead table below for air targets is given as a guide. It is considered impracticable to aim more than 10 leads in

front of an airplane flying across the front. The maximum effective range in this case is, therefore, 150 yards.

Miles per hour	Range in yards		
	50	100	150
400.....	4 TL	7 TL	10 TL

c. Leads are applied by using the length of the target as it appears to the gunner as the unit of measure. The ability of the submachine gunner to spray his bursts of automatic fire constitutes a balance against the errors in leading by the above general rule.

■ **82. TECHNIQUE OF FIRE.**—The following technique should be used by the gunner in firing at air targets:

a. For airplanes diving directly toward or climbing directly away from the firer, or airplanes at a range of less than 50 feet, the gunner holds his aim on the most vulnerable part of the airplane and fires bursts of automatic fire.

b. For all other airplanes, the gunner aims at the airplane, swings to the proper number of leads along the path of the airplane, and fires short bursts of fire, keeping the weapon at the proper lead.

c. Don't underestimate your leads.

■ **83. PLACE IN TRAINING.**—Firing at air targets with service ammunition is the last phase of instruction for the submachine gunner and follows instruction in vehicular firing described in chapter 5.

SECTION III

MOVING TARGETS, RANGES, AND RANGE PRECAUTIONS

■ **84. GENERAL.**—The ability of the submachine gunner to hit a target moving on the ground or in the air is developed through appropriate exercises conducted as part of the combat firing of his organization. The following courses are

included as exercises to achieve this result. In the moving ground target course, the gunner fires at a moving ground target from a vehicle that moves between bursts but is halted when the gunner actually fires. In the air target course, the gunner fires from a stationary vehicle. Firing at towed air targets follows this course.

■ 85. TARGETS.—The target consists of a rectangular frame 5 feet by 8 feet in size, longer axis horizontal, covered with target cloth or other light-colored material, and mounted on a suitable carriage which has the ability to move at a maximum speed of 20 miles per hour. The substitution of E and M targets for the target cloth provides a suitable target for training in firing at moving personnel. The addition of a superstructure at the desired height holding a small air target provides a suitable target for training in firing at air targets.

■ 86. RANGE CONSTRUCTION.—a. The moving target range should be constructed generally as shown in figures 31 and 32.

b. A, B, and C (fig. 31) represent parapets of sufficient size to hide completely the target from the gunner's view, with dugouts in the rear for sheltering pit details. These parapets should be 125 to 150 yards apart. The entire distance from A to C should be equipped with a suitable continuous track behind the parapets for movement of the target. Y is the starting point of the gunner's vehicle, and YB the direction in which the gunner's vehicle moves. The track for the vehicle should be smooth and level. The entire area from Y to the parapets should be clear in order that ground firing points may be employed for instruction in firing at moving personnel and air targets.

c. The dotted line (fig. 32) represents a steel cable which is fastened to the target carriage. The cable is run from (A) along the top of the track to and around a pulley (B); then back under the target track and carriage to a cylindrical drum (C) around which it goes twice; then around a pulley (D) which is mounted on a movable frame to adjust tension in the cable; then back to the target carriage at (E). The shaft (or axle) of drum (C) is attached through a transmis-

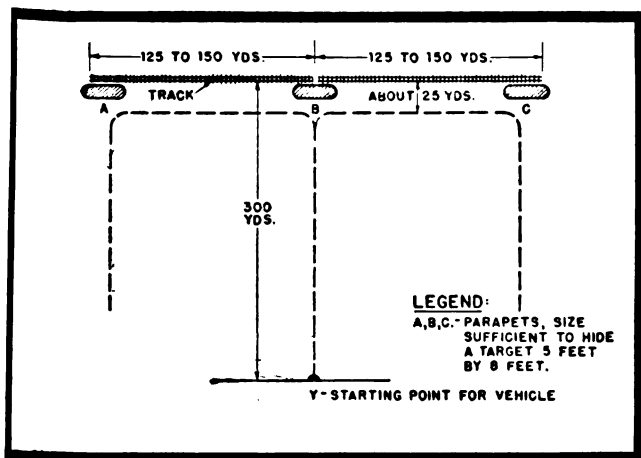


FIGURE 31.—Moving ground target.

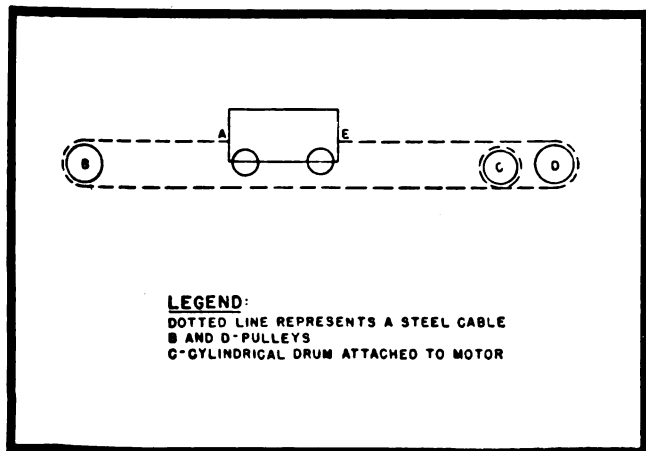


FIGURE 32.—Moving target set-up.

sion and clutch to a motor. Thus the drum may be rotated in one direction by running the motor with the transmission in reverse and in the other direction with the transmission in a forward speed. The target carriage is equipped with flanged wheels and is run on narrow gage tracks.

d. When the necessary material is not available for the construction and operation of such an installation, a simpler arrangement may be made by towing a double-ended sled behind a vehicle; but with a sled, the target cannot be so readily stopped and started again in either direction.

■ 87. OPERATION OF RANGE AND COURSE TO BE FIRED FOR MOVING GROUND TARGETS.—a. (1) *First run*.—The gunner starts at *Y* mounted in the vehicle with his weapon loaded with a 20-round magazine and locked. The vehicle moves at 15 to 20 miles per hour toward *B*. The target may be behind either parapet *A* or *C*. Upon telephone or visual signal from behind the starting line, the target is released and moved at 10 to 20 miles an hour to parapet *B*. When the target appears, the gunner's vehicle is stopped, the gunner unlocks the gun and fires from the stationary vehicle at the moving target as long as it is visible. The target should be released so that the gunner fires the first run at a range of not more than 200 or less than 150 yards.

Rounds fired: 20.

Method of fire: Bursts of about 3 rounds fired in rapid succession.

(2) *Second run*.—The gunner quickly reloads with a new magazine of 20 rounds, and calls, "Ready", whereupon the vehicle again moves forward at 10 to 20 miles per hour. The target should be held behind parapet *B* after the first run for 30 seconds, at the end of which time it is again released in either direction. During the second run, the gunner again fires from a stationary vehicle as before as long as the target is visible.

Rounds fired: 20.

Method of fire: Optional.

b. *Scoring*.—10 points for hitting the target; 2 points for each hit on the target. Maximum score: 100.

■ 88. OPERATION OF RANGE AND COURSE TO BE FIRED FOR AIR TARGETS.—*a.* (1) *First run.*—The gunner stands at a ground firing point immediately in front of parapet *B* with the submachine gun loaded with a 20-round magazine and locked. The moving target modified with a small superstructure of the desired height is placed behind parapet *B*. Upon signal by the officer in charge of firing, the target is released and moves toward either parapet *A* or *C*. Five seconds after the target has begun to move, the gunner may commence firing and may continue to fire until his ammunition is exhausted.

Rounds fired: 20.

Method of fire: Optional.

(2) *Second run.*—The gunner stands at a ground firing point immediately in front of parapet *B* with the submachine gun loaded with a 20-round magazine and locked. The moving target, modified with a small superstructure of the desired height, is placed behind parapet *A* or *C*. Upon signal by the officer in charge of firing, the target is released and moves toward parapet *B*. Five seconds after the target has begun to move, the gunner may commence firing and may continue to fire until his ammunition is exhausted.

Rounds fired: 20.

Method of fire: Optional.

b. Scoring.—10 points for hitting the target on each run; 2 points for each hit on the target. Maximum score: 100.

■ 89. RANGE PRECAUTIONS (see pars. 29 to 32, 47 to 49, and 69).—A red flag will be displayed at all times to indicate that the range is in use. At the pits, a red flag is displayed at any time when men are not under cover. The last member of the detail entering the pits takes down the flag indicating it is safe to fire. Telephone communication with the pits is desirable. In instruction firing at air targets and firing at towed targets, the right and left limits of fire will be plainly marked by posts or flags.

CHAPTER 5

VEHICULAR FIRING

SECTION I

GENERAL

■ 90. GENERAL.—*a.* Units armed with the submachine gun are trained to fire from stationary and moving vehicles at appropriate targets if time and ammunition allowances permit. Practice in firing from moving vehicles follows instruction in known-distance firing, dismounted. Two instruction courses are described in this chapter, one for firing from open vehicles and one for firing from turreted vehicles. For vehicular firing, vehicles are closed as for combat except that ports may be open. Speeds are as nearly uniform as practicable and generally conform to speeds indicated in each course. The vehicle is equipped with the full number of weapons authorized, all in normal position for combat.

b. The courses outlined in sections II and III are furnished as guides and the direction of fire, the length and contour of the track, and arrangement of and ranges to the targets may be varied to suit local conditions. For example, the three phases outlined for each type of vehicle may be fired separately. It is desirable that all personnel at a post, camp, or station fire the same courses.

SECTION II

OPEN VEHICLE

■ 91. ARMY REGULATIONS APPLICABLE.—AR 775-10 prescribes details as to who will fire and ammunition allowances.

■ 92. INSTRUCTION PRACTICE.—The table below prescribes the firing in instruction practice in the order followed by the individual soldier. Two 25-round magazines are allowed to fire the table. The table is fired twice. Additional firing may be done if ammunition allowances permit.

QUICK FIRE—TARGETS E AND F

Phase	Type of fire	Range (yards)	Vehicular speed (miles per hour)	Shots
A.....	Automatic.....	75-25	20	15
B.....	Automatic.....	65-5	20	10
C.....	Automatic.....	12-75	(1)	25

¹ Halted and 20 miles per hour.

■ **93. RECORD PRACTICE.**—Vehicular firing is not included in firing in record practice.

■ **94. PROCEDURE** (fig. 33).—*a. Firing phases.*—(1) The gunner takes his place in the front compartment of the vehicle on the tract about 50 yards from point A with a loaded 25-round magazine.

(a) **Phase A.**—At the order of the officer in charge of firing, the gunner loads and locks his piece, and calls, "Ready." The officer in charge directs the vehicle to start on the course. The vehicle gains and maintains a uniform speed of approximately 20 miles per hour between halts. The gunner may start firing on the targets of group 1 as soon as the vehicle passes point A, at which point the timer starts taking time for the run. The gunner remains low in the vehicle and exposes himself only enough to fire about fifteen rounds at the targets in group 1. He ceases firing on these targets upon reaching point B which is 75 yards from point A.

(b) **Phase B.**—The vehicle continues on the course and after making the turn and reaching the point E the gunner may commence firing on targets of group 2, all to his right front. He fires about ten rounds at targets of this group. He ceases firing when his vehicle passes the point G.

(c) **Phase C.**—After passing group 2, the gunner moves to the rear of the vehicle, reloads his weapon, and prepares to engage targets of group 3. The vehicle continues on the course until it reaches point J where it halts for 15 seconds. The gunner can commence firing on targets of group 3 as soon as the vehicle comes to a full halt. He may continue to fire after the vehicle resumes moving on the course, but ceases firing upon expenditure of the magazine or when the vehicle passes point K.

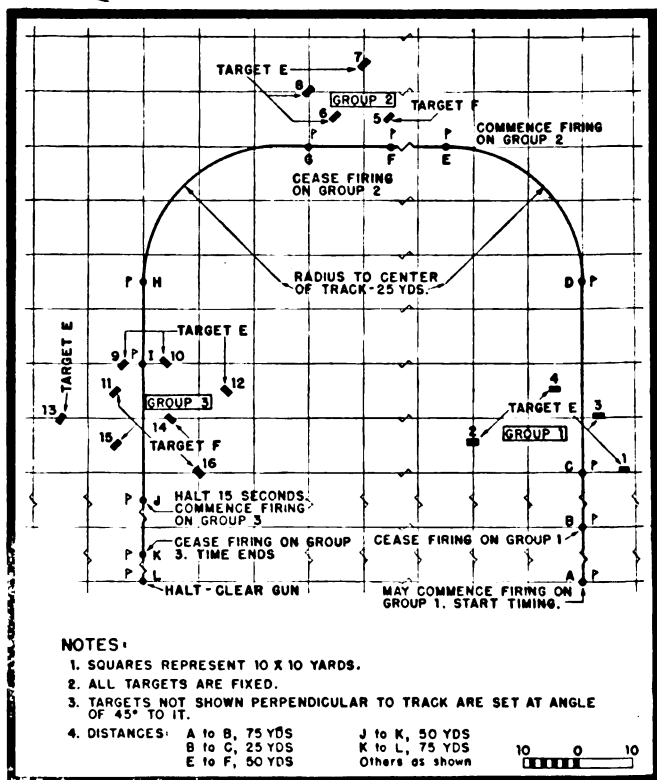


FIGURE 33.—Course for firing from open vehicles.

(2) All firing in all phases must cease upon or before the expiration of the time necessary to travel the distance from point A to point K at 20 miles an hour, plus 25 seconds (65 seconds for the course outlined herein).

b. Action on completion of course.—Upon completion of the course at point L, the gunner removes the magazine, unloads, and reports that his gun is clear. This fact is verified by a noncommissioned officer before anyone is permitted to move in front of the gun.

c. *Timer*.—The timer takes position in the vehicle so as not to interfere with the gunner. He records the time for the entire run from point **A** to point **K** and reports the time for each individual gunner to the officer in charge. The timer may assist the gunner in commencing and stopping his fire at the designated points in the course by tapping the gunner lightly on the back or shoulder or commanding **CEASE FIRING** at the proper points during the run. He times the halt periods and indicates to the driver when to move.

d. *Coaches*.—The duties of coaches for vehicular firing are the same as those prescribed for dismounted firing as described in paragraph 66e.

e. *Marking, scoring, and defective ammunition*.—The targets are numbered as indicated in figure 33. The method of marking and scoring and the treatment of defective cartridges and malfunctions are generally the same as prescribed in the dismounted practice course for record and described in paragraph 66.

f. *Value of hits*.—Each target hit counts five points, and each hit on any target (not to exceed three hits per target, except on target number **16** which may have five hits) counts two points.

g. *Penalties*.—For any infraction of the rules of procedure laid down herein, the gunner is penalized five points for each round fired improperly.

h. *Possible score*.—180 points.

i. *Form for score card*.—See paragraph 112.

■ **95. CONSTRUCTION OF COURSE**.—a. *Safety requirements*.—The extent of the danger area for firing this weapon is 1,600 yards in the direction of fire plus a distance to be determined locally to provide for ricochets. Lateral limits of the safety area must extend 5° beyond the right and left limits of fire. Designation of the lateral limits should take into account the instability of the gunner's mount and the resultant probability of wild shots. The limits of the danger area may be modified by local authorities with the approval of higher authority when the nature of the terrain or artificial barriers makes a smaller area safe. (See AR 750-10.)

b. *Location*.—The range may be located on any ordinary

terrain with some grass, weeds, and underbrush and a good field of fire for the gunner. Targets may be partially concealed but must be easily located by the gunner. The track should be constructed so as to be reasonably smooth, particularly along those portions where firing occurs.

c. Laying out range.—(1) The area required for the range is about 145 yards by 180 yards. The lay-out should provide about 50 yards additional length to permit the vehicle to acquire the required speed before passing point A. The range should be carefully measured according to the distances shown in figure 33. Key points along the track, marked A to L, inclusive, are marked with small flags. A stake about 12 inches high is driven at the location of each target to insure correct ranges and to facilitate placing the targets.

(2) There are three groups of fixed targets, each necessary for one phase of firing. Group 1 is a group of four targets (all targets E, kneeling); group 2 is a group of four targets (two targets E, kneeling, and two targets F, prone); group 3 is a group of eight targets (four targets E, kneeling, and four targets F, prone).

(3) Ranges to the targets are as shown in the following table:

Target No.	Measured from point	Distance along track (yards)	Distance from center of track (yards)
1.....	C	0	8
2.....	C	5	10
3.....	C	10	3
4.....	C	15	5
5.....	F	0	5
6.....	F	10	5
7.....	F	5	15
8.....	F	15	10
9.....	J	25	3
10.....	J	25	3
11.....	J	20	5
12.....	J	20	15
13.....	J	15	15
14.....	J	15	5
15.....	J	10	5
16.....	J	5	10

d. Danger signals.—One or more danger signals (red flags) are placed near the range to give warning when firing is in progress. They should be placed on roads or on the crest of hills where they can be seen plainly.

SECTION III

TURRETED VEHICLE

■ 96. **ARMY REGULATIONS APPLICABLE.**—AR 775-10 prescribes details as to who will fire and ammunition allowances.

■ 97. **INSTRUCTION PRACTICE.**—The following table prescribes the firing in instruction practice in the order followed by the individual soldier. One 20- and one 30-round magazine are allowed for the table. The table is fired twice. Additional firing may be done if ammunition allowances permit.

QUICK FIRE—TARGETS E, F, AND M

Phase	Type of fire	Range (yards)	Vehicular speed (miles per hour)	Shots
A.....	Automatic.....	90-10	20	20
B.....	Single or automatic.....	10-40	(1)	20
C.....	Single or automatic.....	15-70	20	10

(1) Halted and 20 miles per hour.

■ 98. **RECORD PRACTICE.**—Vehicular firing is not included in firing in record practice.

■ 99. **PROCEDURE** (fig. 34).—*a. Firing phases.*—(1) The gunner takes his place in the vehicle on the track about 50 yards from point A with two loaded magazines, 20 rounds and 30 rounds respectively. All submachine-gun firing is through pistol ports.

(a) *Phase A.*—At the order of the officer in charge of firing, the gunner loads his piece with the 20-round magazine, locks it, and calls, "Ready." The officer in charge directs the vehicle to start on the course. The vehicle gains and maintains

a uniform speed of approximately 20 miles per hour between halts. The gunner may start firing on the targets of group 1 as soon as the vehicle passes point *A*, at which time the timer starts taking time for the run. The gunner fires about twenty

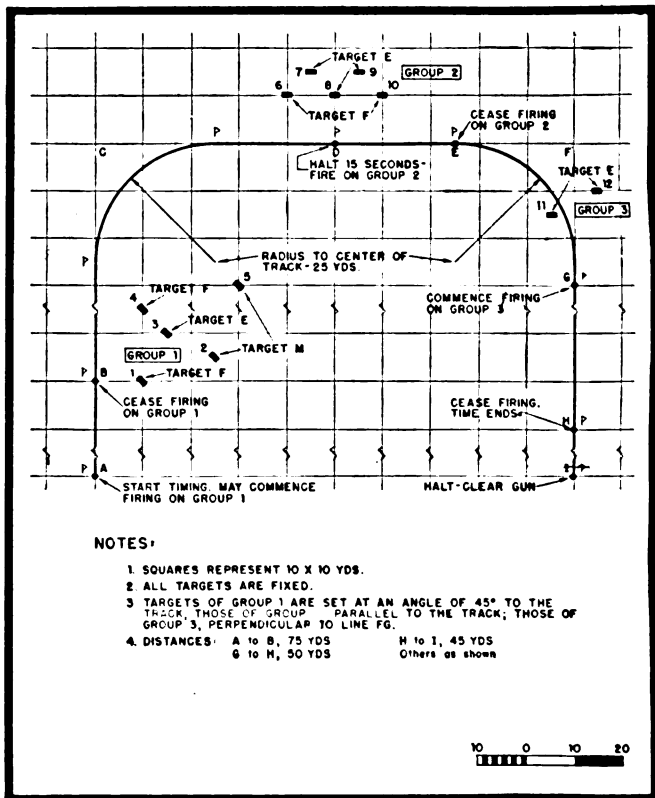


FIGURE 34.—Course for firing from turret-top vehicles.

rounds between points *A* and *B*, using short bursts of automatic fire on each target. At point *B* he ceases firing on targets of group 1.

(b) *Phase B*.—As the vehicle moves toward point *D* the

gunner reloads with the 30-round magazine and prepares to fire from the left and rear ports. Upon reaching point *D*, the vehicle halts for 15 seconds. When the vehicle has come to a full halt, the gunner may commence firing on the targets of group 2. The vehicle moves forward after the 15-second halt. The gunner may continue to fire after the vehicle has moved from point *D*, but must cease firing when point *E* is reached.

(c) *Phase C.*—The vehicle continues to move toward point *G*, and the gunner prepares to fire single shots from the rear ports on targets of group 3. He may commence firing on these targets when the vehicle passes point *G*, but must cease firing when the vehicle reaches point *H*.

(2) All firing in all phases must cease on or before the expiration of the time necessary to travel the distance from point *A* to point *H* at 20 miles an hour, plus 25 seconds (57 seconds for the course outlined herein).

b. Action upon completion of course.—Upon completion of the course at point *I*, the gunner removes the magazine, unloads and reports that his gun is clear. This fact is verified by a noncommissioned officer before anyone is permitted to move in front of the gun.

c. Timer.—The timer takes position in the vehicle so as not to interfere with the gunner. He records the time for the entire run from point *A* to point *H* and reports the time for each individual gunner to the officer in charge. The timer may assist the gunner in commencing and stopping his fire at the designated points in the course by tapping the gunner lightly on the back or shoulder or commanding **CEASE FIRING** at the proper points during the run. He times the halt periods and indicates to the driver when to move.

d. Coaches.—The duties of coaches for vehicular firing are the same as those prescribed for dismounted firing as described in paragraph 66e.

e. Marking, scoring, and defective ammunition.—The targets are numbered as indicated in figure 34. The method of marking and scoring and the treatment of defective cartridges and malfunctions are generally the same as prescribed in the dismounted practice course for record and as described in paragraph 66.

f. Value of hits.—Each target hit counts five points, and each hit on any target (not to exceed four hits per target, except on target number 12 which may have six hits) counts two points.

g. Penalties.—For any infraction of the rules of procedure laid down herein, the gunner is penalized five points for each round fired improperly.

h. Possible score.—160 points.

i. Form for score card.—See paragraph 112.

■ 100. CONSTRUCTION OF COURSE (fig. 34).—*a. Safety requirements.*—The extent of the danger area for firing this weapon is 1,600 yards in the direction of fire plus a distance to be determined locally to provide for ricochets. Lateral limits of the safety area must extend 5° beyond the right and left limits of fire. Designation of the lateral limits should take into account the instability of the gunner's mount and the resultant probability of wild shots. The limits of the danger area may be modified by local authorities with the approval of higher authority when the nature of the terrain or artificial barriers makes a smaller area safe (see AR 750-10).

b. Location.—Requirements of terrain for the range are the same as for open-top vehicles (see par. 95b). With obvious modifications the same general area may be used for both types of firing.

c. Laying out range.—(1) The area required for the range is about 115 yards by 150 yards. The lay-out should provide about 50 yards additional length to permit the vehicle to acquire the required speed before passing point A. The range should be carefully measured according to the distances shown in figure 29. Key points along the track marked A to I, inclusive, are marked with small flags. A stake about 12 inches long is driven at the location of each target to insure correct ranges and to facilitate placing the targets.

(2) There are three groups of fixed targets, each one necessary for one phase of firing. Group 1 is a group of five targets (one target E, kneeling; two targets F, prone; and two targets M, standing); group 2 is a group of five targets (three targets E, kneeling, and two targets F, prone); group 3 is a group of two targets (both target E, kneeling).

(3) Ranges to the targets are as shown in the following table:

Target No.	Measured from point	Distance along track (yards)	Distance from center of track (yards)
1.....	B	0	10
2.....	B	5	25
3.....	B	10	15
4.....	B	15	10
5.....	B	20	30
6.....	D	10	10
7.....	D	5	15
8.....	D	0	10
9.....	D	5	15
10.....	D	10	10
11.....	G	15	5
12.....	G	20	5

d. *Danger signals.*—One or more danger signals (red flags) are placed near the range to give warning when firing is in progress. They should be placed on roads or on the crest of hills where they can be seen plainly.

CHAPTER 6

TECHNIQUE OF FIRE

■ 101. **CHARACTERISTICS OF FIRE.**—*a. General.*—The characteristics of the submachine gun govern the manner in which it is to be used. It is essentially an individual weapon like the rifle, pistol, or bayonet; but it does not supplant or replace any of the others. It is highly effective at close quarters and can remain in action when other weapons have expended their ammunition. The gun is very dependable due to the simplicity of its mechanism. There is very little recoil or "rise." The gunner who uses the weapon properly can attain considerable accuracy of automatic fire.

b. Comparison with other weapons.—As compared to the caliber .30 rifle M1903 or M1, the submachine gun M3 has less killing power, and is less accurate at ranges over 150 yards. However, the submachine gun has the distinct advantage of being well suited to combat at close quarters.

c. Collective firing.—Collective firing is the combined firing of a group of individuals. The submachine gun is normally issued as an individual weapon. It is not issued to all members of a unit as is the pistol or the rifle. Consequently, collective firing of submachine guns is seldom employed. The submachine gun may be used in conjunction with other weapons, especially the machine gun. When used in this manner it is normally employed at short-range targets, while the alternate weapon fires at relatively long range.

■ 102. **TYPE OF FIRE ORDERS.**—*a. Formal fire orders* are seldom necessary or desirable. For control on the target range such orders as "Load," "Ready," "Commence firing," and "Cease firing" are used. In combat, fire orders, if necessary at all, are normally limited to, "Commence firing," and "Cease firing."

b. The target designation may be added to the fire order when the target has not been discovered by the submachine gunner. In this case, the fire order may be given to the submachine gunner as follows: "Jones, rifleman behind tree to right. COMMENCE FIRING." Normally targets are discovered

and immediately taken under fire by the individual gunner himself.

■ 103. RANGE ESTIMATION.—*a. General.*—In battle, ranges are seldom known in advance, so that the effectiveness of fire depends in large measure upon the accuracy of range estimation. The gunner is trained in the estimation of ranges up to 200 yards. He is also made proficient in determining the correct point of aim with his sights at all ranges (par. 55).

b. Appearance of objects.—In some cases, much of the ground between the observer and the targets is hidden from view. In such cases the range is estimated by the appearance of objects. Whenever the appearance of objects is used as a basis for range estimation, the observer must make allowances for the following effects.

(1) *Objects seem nearer—*

(a) When the object is in a bright light.

(b) When the color of the object contrasts sharply with the color of the background.

(c) When looking over water, snow, or a uniform surface like a wheatfield.

(d) When looking downward from a height.

(e) In the clear atmosphere of high altitudes.

(f) When looking over a depression most of which is hidden.

(2) *Objects seem more distant—*

(a) When looking over a depression most of which is visible.

(b) When there is a poor light or fog.

(c) When only a small part of the object can be seen.

(d) When looking from low ground upward toward higher ground.

c. Training in range estimation.—Proficiency in range estimation can be obtained only by constant practice and diligence. The methods and exercises prescribed in paragraph 57 are suitable means of developing proficiency in range estimation.

■ 104. SAMPLE PROBLEMS.—*a. General.*—In preparing exercises involving the use of the submachine gun, advantage is

taken of field exercises and maneuvers to present logical situations, some phases of which would require the employment of this weapon, both from the ground and from the vehicle. These exercises should include the use of the submachine gun in the dismounted reconnaissance of a road block, employment on outpost duty or in establishing march outpost, and use by mounted scouts and by armored vehicle personnel in assumed ambush situations.

b. Exercises.—The following exercises are given as a guide and may be modified to suit the terrain, equipment, and time available. Each problem utilizes natural terrain features, equipment normally available, and actual personnel targets. The exercise should be conducted under the supervision of a commissioned officer who will make all checks and point out all errors. Service ammunition is not fired during these exercises. The purpose of all exercises is to train the individual submachine gunner and unit leaders in target designation, range estimation, fire orders, and sighting. Every effort is made to carry out the fundamentals of concealment, camouflage, and scouting and patrolling in the conduct of these exercises. Soldiers acting as personnel targets should be rotated with gunners taking the course, and type targets should be shifted frequently to avoid monotony.

(1) *No. 1.*—A stretch of terrain not to exceed 400 yards in length and containing as many natural features as possible, such as trees, shrubs, tall grass, ditches, and walls, is selected for the course. Along a designated path are placed actual personnel targets at various ranges from the path and in normal concealment. Typical targets should include prone, kneeling, and standing soldiers, individual and groups of moving men, machine guns with normal crews, and mounted scouts. The gunner is required to proceed down the designated path and locate targets, estimate ranges, take position, and simulate fire on each target that he locates. He is accompanied by an instructor who checks all phases of the gunner's action on each type target.

(2) *No. 2.*—In a suitably selected location, a road block of any type should be established and held by a detachment of machine guns and riflemen. Either the submachine gunner dismounted, the mounted scout with submachine gun, an

armored vehicle with submachine gun as an alternate weapon, or any combination of these, should operate against the road block. A commissioned officer should accompany the individual or the vehicle to check and instruct in procedure and criticize the commands of the individual or car commander during the problem.

(3) *No. 3.*—A small area in which buildings predominate and which can be presumed to be a village or city street should be selected for this exercise. The area should be such as to allow personnel to occupy buildings, roofs and windows, and to erect barricades. Personnel armed with the submachine gun and mounted on motorcycles and in armored cars should be required to operate against personnel in buildings and to reduce the barricade. This type of problem is especially beneficial in the training of mounted and dismounted action, collective firing with other weapons, and proper leadership. All actions by individuals, squad or platoon leaders, and individual units should be carefully checked by a commissioned officer, and the exercise should be reviewed and criticized immediately upon completion.

CHAPTER 7

ADVICE TO INSTRUCTORS

■ 105. **PURPOSE.**—The provisions of this chapter are particularly applicable to emergency conditions when large bodies of troops are being trained under officers and noncommissioned officers who are not thoroughly familiar with approved training methods.

■ 106. **MECHANICAL TRAINING.**—*a.* As a general rule, instruction is so conducted as to insure the uniform progress of the platoon and company.

b. The instructor briefly explains the subject to be taken up and demonstrates it himself or with a trained assistant.

c. The instructor then causes one man in each squad or subgroup to perform the step while he again explains it.

d. The instructor next causes all members of the squads or subgroups to perform the step, checked by their noncommissioned officers. This is continued until all men are proficient in the particular operation, or until those whose progress is slow have been placed under special instructors.

e. Subsequent steps are taken up in like manner during the instruction period.

■ 107. **MARKSMANSHIP.**—*a. General.*—Training is preferably organized and conducted as outlined in chapters 3, 4, and 5. Officers should generally be considered as the instructors of their units. As only one step is taken up at a time, and as each step begins with a lecture and demonstration showing exactly what to do, the trainees, although not previously instructed, can carry on the work under the supervision of the instructor.

b. Instructors.—It is advantageous to have all officers and as many noncommissioned officers as possible trained in advance in the prescribed methods of instruction. When units are undergoing marksmanship training for the first time, this is not always practicable nor is it absolutely necessary. A good instructor can give a clear idea of how to carry on the work in his lecture and demonstration preceding each step. In the supervision of the work following the demon-

stration, he can correct any mistaken ideas or misinterpretations.

c. Equipment.—The instructor should personally inspect the equipment for the preparatory exercises before the training begins. A set of model equipment should be prepared in advance by the instructor for the information and guidance of the organization about to take up the preparatory work.

d. Inspection of submachine gun.—No man is required to fire with an unserviceable or inaccurate weapon. All submachine guns are carefully inspected far enough in advance of the period of training to permit organization commanders to replace all inaccurate or defective weapons.

e. Ammunition.—The best ammunition available is reserved for record firing, and the men should have a chance to learn sighting with that ammunition before record practice begins. Ammunition of different lots should not be used indiscriminately.

f. Vehicles and drivers.—The best vehicles and drivers of each organization are made available when vehicular firing begins. Vehicles are thoroughly inspected mechanically and should be suitable for the type of firing desired.

g. Ranges.—All ranges to be used, including those for moving targets and air targets, are carefully inspected far enough in advance of the period of use to permit changes or repairs when necessary. Targets and other equipment will be in the best state of repair possible when range practice begins. Arrangements for firing at towed air targets are made with the proper authorities in sufficient time to insure the necessary targets and towing airplanes at the proper time.

■ 108. ORGANIZATION OF WORK IN MARKSMANSHIP.—*a. Preparatory training.*—The field upon which the preparatory work is to be given is selected in advance and a section of it assigned to each organization. The equipment and apparatus for the work will be on the ground and in place before the lecture is given, so that each organization can move to its place and begin work immediately and without confusion.

b. Range practice.—(1) The range work is so organized that there is a minimum of lost time on the part of each man. Long periods of inactivity while awaiting a turn on

the firing line will be avoided. For this purpose no more men should be on the range at one time than the number of targets or ranges available can accommodate efficiently.

(2) In moving ground and air target firing and vehicular firing, it is advisable to have on the line, the order that is next to fire and to have these men practice with dummy ammunition or simulated fire. When the size of the firing point makes this action impracticable, each order should be given a score of simulated fire before firing with ball cartridges.

■ 109. LECTURES AND DEMONSTRATIONS IN MARKSMANSHIP.—*a.* The lectures at the beginning of each step are an important part of the instructional methods. The lectures may be given to the assembled command or group.

b. The lecturer will know in advance what he is going to say on the subject. Under no circumstances will he read to a class an outline or lecture prepared by himself. If the instructor cannot talk interestingly and instructively on each subject without the use of copious notes, he should not be giving the lectures.

c. The one important thing is to show the men undergoing instruction by explanation and demonstration, just how to go through the exercises and to impress upon them why they are given.

■ 110. TECHNIQUE OF FIRE; RANGE ESTIMATION.—*a. General.*—The instructor will secure the necessary equipment, lay out and supervise the construction of the courses to be run, and detail and train the necessary assistants prior to the first period of instruction. Instructors use their initiative in arranging additional exercises to those given in paragraph 104. It will be explained to pupils how the exercises used illustrate the principles in the technique of fire. Good work in the conduct of the exercises as well as errors will be called to the attention of all pupils.

b. Range estimation.—The instructor makes the necessary arrangements to set up the training courses for range estimation given in paragraph 103 prior to the first period of this training. All equipment such as paper and pencils will be available to each group of men at the beginning of each instruction period.

■ **111. ALLOTMENT OF TIME.**—A suggested allotment of time for conducting range practice is tabulated below. The time indicated is for a troop or similar organization rather than for individual firing.

<i>Subject</i>	<i>Time (hours)</i>
Instruction, dismounted practice course.....	9
Instruction, vehicular firing.....	12
Instruction, moving ground and air targets.....	12
Record, dismounted practice course.....	3

■ **112. RECORD OF INSTRUCTION AND QUALIFICATION.**—A convenient form for keeping a record of the status of each individual's training is shown below.

RECORD OF SUBMACHINE GUN INSTRUCTION

(Army serial No.)

(Last Name) (First name) (Middle initial)

Grade Organization

Preparatory training and gunner's test

	Date	Result	Initials
General description of weapon.....			
Removal of groups.....			
Replacement of groups.....			
Disassembling of groups.....			
Assembling of groups.....			
Care, cleaning, and oiling.....			
Functioning and fire control.....			
Stoppages and immediate action.....			
Spare parts, name and explain use.....			
Positions, standing, kneeling, prone.....			
Use of sights.....			
Trigger squeeze.....			
Range estimation, effect of wind and light.....			
Safety precautions, individual.....			
Loading and unloading.....			
Examination.....			

Method of marking (under "Result")

Excellent: **FF**

Satisfactory: **Y**

Unsatisfactory: **X**

Inferior: **XX**

[Front]

SUBMACHINE GUN, CAL. .45, M3
RECORD OF SUBMACHINE GUN INSTRUCTION

(Army serial No.)

(Last name) (First name) (Middle initial)
Grade ----- Organization -----

Marksmanship training and record firing

Marksmanship exercises (par. 59)	Date	Initials
First		
Second		
Third		

Preliminary firing	Targets hit	Number of hits	Score		
Dismounted practice					
Dismounted practice					
Dismounted practice					
Vehicular firing					
Vehicular firing					
Moving ground targets					
Air target					

Record firing					Signature
Dismounted practice					

Qualification (dismounted practice course):

Expert —

1st class gunner

2d class gunner

(Signature of organization commander)

(Grade and organization)

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